

HORSES:
THEIR POINTS AND MANAGEMENT
IN HEALTH AND DISEASE

FRANK TOWNEND BARTON, M.R.C.V.S.

University of Pennsylvania

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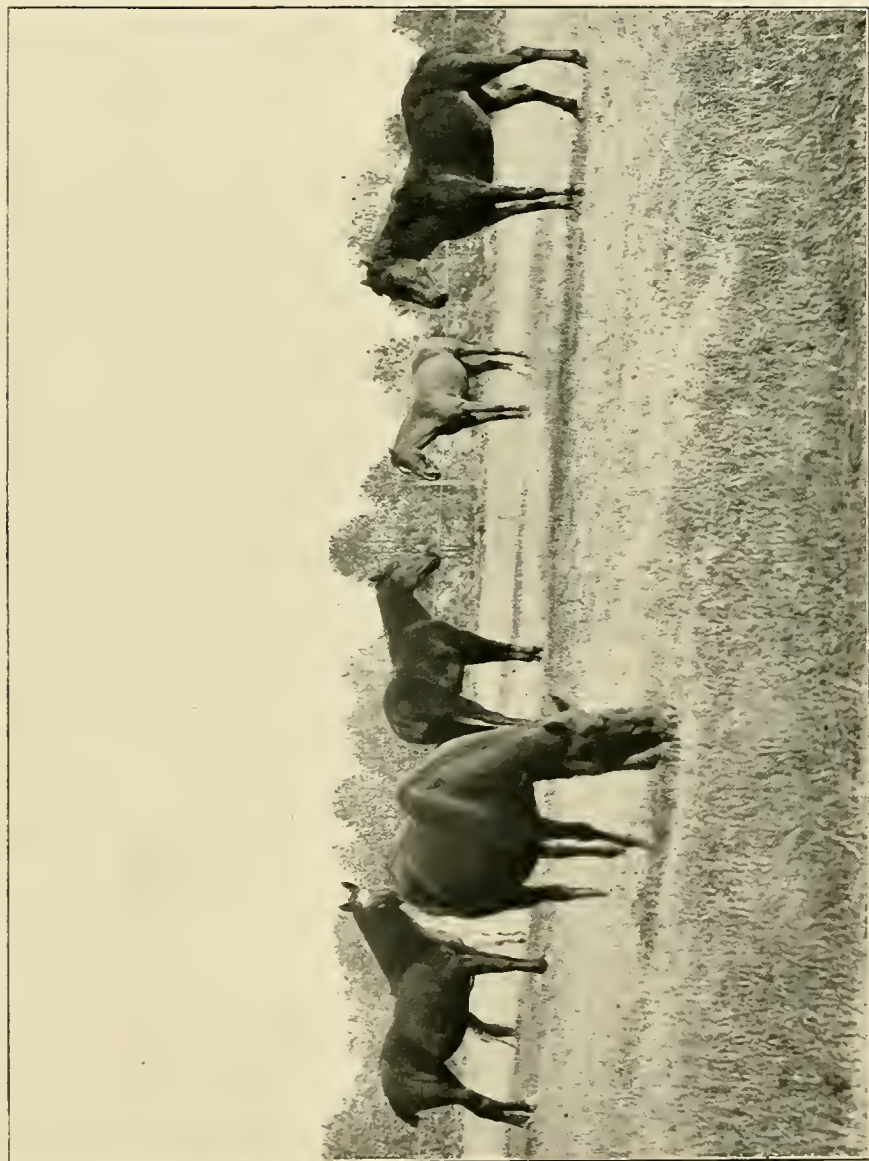
HORSES :
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A GROUP OF MARES IN PADDOCK.

HORSES:

THEIR POINTS AND MANAGEMENT IN HEALTH AND DISEASE

BY

FRANK TOWNEND BARTON, M.R.C.V.S.

AUTHOR OF

"A Text Book of the Practice of Equine Medicine," "The Veterinary Manual for Horse Owners," "Dentition of the Horse, Ox and Sheep," "Breaking and Training Horses," "How to Choose a Horse," "Sound and Unsound Horses," "Our Friend the Horse," "Sporting Dogs," "Non-Sporting Dogs," "The Groom's Guide: His Duties and How to Perform Them," "Everyday Ailments and Accidents of the Dog," "The Elements of the Practice of Comparative Medicine," "The Horse Owners' Companion," "The Dog Breeders' Pocket Book," etc., etc., etc.

WITH NUMEROUS ILLUSTRATIONS FROM PHOTOGRAPHS.

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P. F. T.

TO MY DEAR SON
THIS VOLUME IS INSCRIBED
WITH HIS
FATHER'S LOVE

1872

PREFACE

ALTHOUGH there are a vast number of books upon the market relating to the Horse in one way or another, the author believes that there is still a little room left for literature of the right class upon the subject.

The Points and Management of the Horse in Health, Accident and Disease does not profess to be any more than an elementary treatise, but the writer has confidence in believing that it will be found to contain the *essential elements*, without wearying his readers with matter of no material interest or utility.

The various breeds of horses have been discussed in relation to their points, not only for the Show Ring, but for utility in other ways, and whenever necessary, the writer—as an experienced and practical veterinarian—has endeavoured to indicate not *only faulty conformation*, but also disease detrimental either for breeding purposes, or for work.

Chapters on general management ; the management of brood mares ; feeding ; diseases in general ; immunity to disease, etc., have been briefly alluded to, and should prove of some practical utility.

The book ought to be of service to those residing abroad, the principal tropical diseases having received passing notice. Those attending agricultural and other colleges will, it is hoped, find the description of the breeds of interest, but for a useful non-technical work upon the diseases, etc., the reader is referred

PREFACE

to Barton's "Elementary Veterinary Manual for Horse Owners" (Everett & Co., 10s. 6d. nett); also the "Age of the Horse, etc.," and "Sound and Unsound Horses," published by Messrs. Everett.

Most of the photographs have been taken specially for this work by Mr. Parsons (specialist in animal photography), of Alsager, Cheshire, and those who find fault with the pictorial portion of the book must indeed be hard to please.

No words of the author can express his deep sense of gratitude to Mr. Parsons, to Captain Gordon Mackenzie, and to Colonel Henriques, to Messrs. Jones and Sons, of Dinart Hall, Colwyn Bay, to Mr. Stericker, of Pickering, and to others who have been kind enough to lend their aid either by photographs or articles.

1906.

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SECTION A.—INTRODUCTION.

GENERAL MANAGEMENT OF
HORSES.

FOODS.

FEEDING

GENERAL MANAGEMENT OF HORSES.

SECTION A.—FOODS.

FOR the due maintenance of health it is necessary that food of the best quality procurable be purchased, inferior fodder being useless for feeding purposes, and very often a fruitful cause of illness. The enormous amount of foreign feeding materials coming into this country is far in excess of what it should be if horsekeepers were wider awake to the immense superiority of home-grown produce. It bears no comparison to that grown in our own country, and as the best is the cheapest, the writer strongly recommends the sole use, if possible, of home-grown forage.

If one takes the trouble to examine the mixed “chopped food” doled out to the horses belonging to many of the large studs in this country, it at once becomes evident that the oats are very small, shrunken, and perhaps bleached; that the beans and peas are hard, shrivelled and miserably deficient in substance, whilst the bran is dark coloured, its flakelets small, and that it is very deficient in adherent flour, and lacking the odour so characteristic of the best samples of bran; in fact, the bran one often finds in mixed fodder is only fit for bran poultices.

The cut hay is over-dried and coarse. It must not be understood that these remarks apply to the fodder sold by all forage dealers, but it does to some of them.

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This is one of the chief reasons why some horses never look well, and the master is at a loss to know the cause. In certain instances, the corn dealer and coachman are in a better position to understand the cause of the defective condition of the stud, hence the author strongly recommends every horse master to make it a point of purchasing his own forage, and buying each article—if it be a mixed fodder—separately, afterwards having it mixed at home.

In this way one is certain of obtaining the best materials at market prices.

In some localities it is the custom to feed horses on a particular cereal, such as oats, many Scotch farmers feeding their stock entirely upon these and hay. Again, others will use maize, together with chopped hay and straw. The feeding properties of maize are unquestionably very great, but not suitable for making the constitution robust.

There is no doubt about it, a mixed diet is the most suitable for utility. The following mixture will be found very suitable for general use : Best English oats, two parts ; bruised maize, half part ; best bran, one part ; best bruised beans, quarter part ; best split peas, quarter part ; English chopped hay, four parts.

For hunters and other horses requiring good hard condition, the proportion of bran can be diminished, and the beans increased. For young horses whole oats are the best, as these necessitate grinding and thorough insalivation. Bruised oats are more suitable for old horses, or those troubled with digestive disturbances. When horses are hired from the job master, the latter frequently supplies the fodder, at an additional cost, of course, but it is a better plan to buy one's own forage even

GENERAL MANAGEMENT OF HORSES

when feeding a job horse, because unless satisfactorily foraged, the animal will not perform its work as freely as it ought to do.

It will be as well if we indicate some of the chief points of quality in the various foods, so that those who are novices in the art of purchasing forage will have a better idea of selecting the good, rejecting indifferent, bad, and damaged fodder. Hay that is one year old is the best, and should preferably be composed of mixed grasses, or these and clover. In Scotland, rye-grass hay is largely used, and horses seem to thrive on it all right. Rye grass (*lolium perenne*); Timothy (*phleum pratense*); meadow foxtail (*alopecuris pratensis*); crested dog's tail (*cynosurus cristatus*); the smooth-stalked meadow grass (*poa pratensis*); tall fescue (*festuca elatior*); and sweet-scented vernal grass are the most useful feeding grasses for horses, and one, or more of these should be contained in every good sample of hay.

As there are other grasses equally useful, it is advisable to briefly mention some of these.

Cynosurus Cristatus (Crested Dog's Tail).—The nutritive properties of this grass are greatest when it is in flower. It is found in the best natural pastures, but prefers good quality dry land.

Alopecuris Pratensis (Meadow Foxtail Grass).—When this grass is mown or eaten down it produces quick "foggage." It is very early, and an excellent grass for permanent pasture. Prefers a moderately moist soil.

Dactylis Glomerata (Cock's-foot Grass).—This is a first class grass provided that it is not allowed to get coarse. If it does so,

HORSES: THEIR POINTS AND MANAGEMENT

it is much too fibrous for horses. It is early grass, and of course, bulks largely.

Anthoxanthum Odoratum (Sweet-scented Vernal Grass).—This grass improves the quality of hay. It does not increase the bulk much. Horses like it very well, so that it should be included in permanent pasture grasses.

Poa Nemoralis (Wood Meadow Grass).—Horses like this grass very much. It is early, very nutritious, hardy, and fond of growing in shady places.

Lolium Perenne (Perennial Rye-grass).—An excellent grass, largely grown, and should be found on all permanent pastures.

Phleum Pratense (Cat's-tail or Timothy Grass).—A very valuable grass indeed, and hay made from this brings the best of prices if it has been well harvested. For permanent pasture and alternate husbandry it has no superior. It is nutritious, and produces abundant crops early and late.

Poa Trivialis (Rough-stalked Meadow Grass).—This is an excellent grass, and very fond of growing in damp meadows and flooded land. Horses are exceedingly fond of it, and it has high nutritive value.

Festuca Pratensis (Meadow Fescue).—This makes good hay, and bulks well. It likes a good moist soil to flourish upon. Is found in most natural pastures, constituting the bulk of such.

Festuca Duriuscula (Hard Fescue Grass).—An early grass and one that resists drought. The foliage is fine, and it is a grass that ought to be in all permanent pastures.

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LOLIUM ITALICUM.
(Italian Rye Grass)



CYNOSURUS CRISTATUS
(Crested Dogstail)



PHLEUM PRATENSE.
(Timothy)



LOLIUM PERENNE.
(Perennial Rye Grass)



ALOPECURUS PRATENSIS.
(Meadow Foxtail)



POA PRATENSIS.
(Smooth-stalked Meadow Grass)



DACTYLIS GLOMERATA
(Cocksfoot)

BRITISH FEEDING GRASSES.

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Avena Flavescens (Golden Oat Grass).—A very fair grass when mixed with other permanent ones.

Lucerne.—The lucerne is largely used for feeding stock in summer, coming into use about a couple of weeks earlier than red clover. It ought to be cut just when it is beginning to bloom, being at this time at its best. Should be sown in April in drills, six or seven inches apart. Once the lucerne is established it will last for a number of years. Horses are remarkably fond of it, and it does very well for milk mares. It should be grown on every farm, being equally useful for cattle and sheep.

Sainfoin.—The common English perennial variety of sainfoin will only give a single crop during the season. It is very useful, both in its dry and green state, and horses and cattle are singularly fond of it, so that it is in great demand.

The Clovers.—*Trifolium hybridum*, *pratense*, *incarnatum*, and *arvense*, *i.e.*, alsike, red, crimson, and white clovers, are the varieties mostly used. Giant clovers are much too coarse, unless when given in the young state. Any of the abovenamed clovers make a very valuable adjunct to hay. Clover grown with nitrates is not good for horses, being liable to bring on diuresis, *i.e.*, excessive urination.

Bran.—This should have a sweet smell, be in large flakes, of a pale flesh tint, and make the palm of the hand floury when rubbed with the bran. Can be given dry or moist. Too much bran is a very bad thing for horses, predisposing them to intestinal concretions. Wet bran is a laxative and very useful for assisting purgative medicine. It is useless when given alone, as a food. The addition of molassine meal to a bran mash, is a very useful adjunct. From 2 to 4 lb. of this meal may be given daily with benefit.

HORSES: THEIR POINTS AND MANAGEMENT

Oats.—Taken all round, oats constitute the most valuable food we have for horses. They do very well on these when given as a staple diet, but their value is materially enhanced by the addition of other cereals. May be given bruised or whole, wet or dry. For sick horses, steamed oats are useful, more especially if mixed with bran and linseed gruel. Good oats should have a pleasant odour, be plump and thin in the husk. The seed within the latter ought to be large. Some oats are very deceptive, being apparently large, but the contents of the husk practically nil, even less than oats half the size. Small, dusty, fusty oats are useless, and ought never to be purchased. The best oats will weight 42lb. per bushel. Black Tartarian oats are now largely grown in this country, and there are some very fair samples of these.

Beans and Peas.—These are valuable adjuncts to other feeding materials, especially those deficient in nitrogenous matter. It is better to give them bruised or split, and they should only be given in strictly moderate quantities.

Barley.—Some horsekeepers use considerable quantities of barley, either boiled or steeped. The writer does not consider it so suitable as oats, and it has many disadvantages. It is not necessarily cheaper than the cereal last mentioned.

Maize.—The feeding value of maize is too well known to need any comment. It is a most useful article of fodder for feeding up horses run down in flesh.

Wheat.—Not suitable for horses. Many evil results have arisen through the use of this cereal.

Turnips and Swedes.—Although not of any particular utility, swedes are as a rule liked by horses.

GENERAL MANAGEMENT OF HORSES

Carrots.—A few stones of “horse carrots” should find a place in every stable. If these are not obtainable, beet-roots may be substituted. Should be washed and given whole. Kohl-rabbi is equally useful.

Linseed.—The addition of half a pound of linseed to the fodder every night is advantageous, improving the coat and skin. Its feeding value is considerable.

Molassine Meal.—The introduction of this as an adjunct to the food of horses and cattle has been very satisfactory, and those who have used it speak of it as excellent. The enormous demand for it is sufficient evidence of its utility, and there appears every likelihood of its demand being further augmented. Its saccharine constituents render it of considerable feeding value, at the same time of medicinal service, more especially so for dislodging internal parasites, such as worms. Give 2 to 4 lb. daily, with bran, or ordinary food

SECTION B.—FEEDING.

IF horses are not well fed, and regularly fed, they will never be in the pink of condition. One of the best tests of a horsekeeper's abilities is that afforded by the condition of his stud. Of course, a man may have one or more horses to look after that will never do him any credit, no matter however smart and capable he may be.

As a rule it is fairly good evidence of a man's worth if his horses are kept in tip-top condition, not only as regards flesh, coat, etc., but for working capacity. A *fat* horse is never in working condition, more especially if Dr. Green has put the flesh on. That must come off before really hard work can be performed.

HORSES: THEIR POINTS AND MANAGEMENT

The amount of food, and nature of this, must to some extent be regulated by the work to be performed. Many horse-keepers feed their horses four times per diem, as follows:—Early morning, 6 a.m. ; noon, 12 o'clock ; afternoon, 4 o'clock ; evening, 6 o'clock ; but it is better to have a more equable division of time, so that the hours of 6, 10, 2 and 6 are better, though perhaps not so convenient.

A very important matter in connection with feeding is that of allowing about one hour or so to elapse, after feeding, before working the animal. It is a very pernicious custom to feed horses whilst on the road, unless sufficient time be allowed afterwards. The nose-bag system of feeding is pernicious. It can claim neither economy nor utility.

Baiting horses is quite a different matter, and may have a twofold purpose, viz., the animal gets a rest and a restorative, whilst the driver has a refresher—a mutual advantage. Three times a day is often enough to feed a horse performing ordinary duties—morning, midday and evening. Never feed immediately after work, but allow time for the horse to cool down a bit, and then water to the extent of two or three quarts.

When there is hay in the rack, and the food is put in the manger, the latter will receive first attention, and then the hay. Preferably half an hour should elapse between the cereals and the hay. It is a common custom to rack up with hay at the same time, and leave for the night.

Most horsekeepers—at any rate the wiser ones—make a practice of looking at the stud before retiring to rest. This is a most commendable practice, and one that should always be done whenever circumstances permit.

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Some horses are what is known as greedy feeders, clearing off a feed of corn in an incredibly short time. Under these circumstances feeding on the "instalment" plan is the best, because semi-masticated food is almost certain to bring on its evil results at some time or another. Many horses of this class are very bad doers, so that the remedy is to divide the food at each feeding time, allowing about a quarter of an hour interval. In summer it is advantageous to allow a small quantity of green meat daily, and if the animal is going to be turned out to graze, a dose of physic should be given. This remark is equally applicable to hunters about to be *summered*.

Many proprietors turn their horses out at night. In South Africa, where Cape Horse sickness prevails, it is necessary to either stable or kraal the animals at night, and then turn out to graze after the dew is off the grass.

GRAZING HORSES.

It is an universal custom to turn horses out as much as possible during the summer. Some horses come up from grass as fat as a Christmas ox, but this does not last long, because "grass flesh" is not "working flesh."

There is no doubt that a horse does derive many benefits from the pure air of the fields, likewise it gets a great deal of rest.

That celebrated sportsman, Nimrod, was not of this opinion, and his calculation as to the mileage done by a horse turned out for a summer's grass is amazing. Unquestionably there is some truth in his statements, yet the immense benefit to legs and feet—all veterinarians know this well enough—cannot be disputed with any degree of accuracy.

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The verdant fields bring fresh life into horses working in towns, coal pits, etc., and he who has not observed the enjoyment they derive, cannot be said to be filled with the power of keen observation. That the practice of *summering hunters* is a good one I do not believe, sharing my opinion with that of Nimrod. If a horse is going out to graze for a few weeks, remove all the shoes, only pay attention to his feet whilst he is out at grass. Some horses are injured through allowing their feet to get into bad form. The same remark is equally applicable to colts. Have their feet pared at regular intervals. Colts should be "housed" in September, or October at the latest.

To run out all through the severe weather makes young stock wild and coarse, so rendering them more tiresome to break. When selecting grazing ground don't have old grass if there is any possible chance of obtaining any other. It is not of much service. May, June and July are the best months for herbage, and horses get the most benefit during these times.

As many accidents happen about this season before turning out, one should inspect the boundary line of the park in order to see that there are no objects likely to do injury. Barbed wire is a very common cause, and if left lying about very serious injury may result.

The author's experience as a veterinary surgeon is, that this wire is one of the best friends the veterinary has so far as his day-book is concerned. Never turn a horse out when there is a mare and foal—unless it be another mare and her foal—otherwise the animal may get worried to death. Quite recently I attended a case of this nature.

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Another matter is, that of not allowing horses to go out into a strange park at night. I once saw four horses nearly torn to pieces through doing this foolish act. They all went full tilt into a barbed wire fencing through being set at liberty in darkness and in a strange place.

The temperaments of other horses should be inquired into before allowing one's favourite to mix with strangers. Lastly, it is not always wise to allow healthy horses to mix with strange ones because disease can be transferred by so doing.

SECTION B.

GROOMING.

POINTS AND EXTERNAL
REGIONS OF THE HORSE.

CHAPTER I

GROOMING.

THE best evidence of a groom's abilities is that afforded by the condition of his horses, likewise that of his stables, stable appliances, harness, etc. A clever groom must possess certain qualifications, and the chief of these postulates are :—

- 1.—Willingness to comply with his master's orders, when the dictates of intelligence teach him that it is right so to do.
- 2.—To be capable of acting in emergency without seeking outsiders' aid.
- 3.—He must be methodical, and keep all appliances clean, and accessible at a moment's notice.
- 4.—Early rising is a very necessary qualification, and one that brings pleasure with the work, but toil to the sluggard in his bed.
- 5.—Thoroughness of work, no matter whether it be polishing brass fittings, washing the stable, or cleaning horses, harness, etc.
- 6.—Strong arms, light hands, devotion to duty, honesty in every action, sobriety, and above all, kindness to the animals placed under his charge.

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Possibly every groom may *flatter* himself that he has his share of all the foregoing ; even go further *by imagination*.

To try and clean a horse with a heavy coat upon him is not a satisfactory task, so that whenever possible the hair should be kept short, besides, it is much healthier for the horse.

Grooms, masters, and their coachmen, very often differ as to the advisability of *washing the mud off*, or leaving it on until dry, and then brushing it off with the dandy brush. It seems to be purely a matter of opinion as to which of these plans is the best. Neither of them are free from objection ; still, the matter is in the wrong place, and must be got rid of.

So far as the welfare of the horse (not the groom) is concerned, the writer thinks it better to allow the mud to dry on, only it must be got thoroughly off the skin, otherwise it is irritating to it. It is quite easy to tell whether a horse has been properly cleaned by running one's hand down the inside of the thighs, legs, etc., when any adherent particles of dust will be readily felt.

As to the advisability of washing the feet directly a horse comes in, there can be no two opinions, but the heels ought not to be wetted, *unless very thoroughly* dried and then bandaged.

During the hot weather, if a horse comes in with a lather upon him, it is a good plan to sponge and dry him. For keeping the coat down in winter, a heavy woollen rug should be used, but in summer linen ones only.

Vigorous shampooing with a wisp of straw has been practised from time immemorial, yet there is nothing superior to it

GROOMING

in the present day. Elbow grease is necessary in every branch of a groom's work.

At the time when a horse is changing its coat, it does not, as a rule, look in the best of condition, so that due allowance must be made at these periods. For putting a gloss on the coat there is nothing to equal a chamois leather, and every groom ought to take advantage of this useful article for the horse's toilet. Inside the thighs, under the fore-arms, and beneath the mane—if this is long—require special attention when cleaning. Combing the long hair should never be neglected, this being so very abundant in well bred, heavy horses. Trimming the mane, tail, and around coronets, and at footlock, *i.e.*, hair at back of fetlock, is very necessary to keep a horse smart.

CLIPPING.

Opinions are divided as to the advisability of completely or partially removing the hair. Some men will clip the hair off the body, allowing it to remain on the limbs, whereas others will clip the limbs, and leave the hair on the body.

Again, another set advocate clipping all over, excepting that beneath the saddle, or back and loins. If left on beneath saddle, it is said by these advocates to prevent sore back. The writer has no desire to try and disturb such opinions, every man being justly entitled to hold his own, and “support” it if he can. Personally, I prefer to have a horse clipped from head to feet at one clipping. When a horse has a heavy coat he sweats far too much, and loses flesh rapidly. If clipping in winter, clothe body well afterwards for a few days.

HORSES: THEIR POINTS AND MANAGEMENT

THE UTILITY OF BANDAGES.

The beneficial influences following the use of bandages on the lower portions of the limbs of horses are too well known to require further remarks. They are not only of value as a medium of support whilst the animal is in the stable and at exercise, but also serve for the conservation of energy in tendons, etc., that are weakened through overwork, or injured by being overstretched, etc.

Both cotton and linen bandages are sold, but the most useful bandages yet brought to the writer's notice are the "Sandown Patent Fleecy Horse Bandages," manufactured by the Sandown Company, Stamford Street, Nottingham. The advantages claimed for these are that they do not leave any marks on the leg; do not slip; are non-tearable; allow free circulation, and are specially useful for holding water and medicated fomentations.

No. 1 Quality is two yards long and has a cotton fleece, and No. 2 Quality has a woollen fleece, with a length of two and a half yards. Special widths are made for ponies. The quality first named is suitable for hunting, polo, racing, and the application of cold water, whereas No. 2 is better for hot water, travelling and stable use, etc. These bandages are sold at 5s. and 7s. 6d. per set respectively.

CHAPTER II

POINTS AND EXTERNAL REGIONS OF THE HORSE.

For convenience, and for a correct understanding of the various external regions of the horse, it is necessary to briefly allude to what are, in popular language, spoken of as the "Points of the Horse," though in reality the term "points" has a much more significant and broader meaning.

Horsemen frequently make use of the word "middle piece" (being excellent, etc.), as indicative of the whole of the region lying between the fore and hind limbs. In the same way, the expressions (as being good, poor, etc.), "fore" and "aft," are used in a similar manner.

For convenience of judging animals, these terms are applicable and expressive, but quite useless for the study of the various regions and structures included within the aforementioned areas.

The head, neck, body and limbs are all capable of division and sub-division, consequently, the author will consider these regions in the manner in which they are usually described, starting with the

HORSES: THEIR POINTS AND MANAGEMENT

HEAD.—The summit of the head, or that portion lying between the ears, is known as the *poll* or *occiput*. It is from here that a tuft of hair or “forelock” springs, giving, as it were, a finish to the mane.

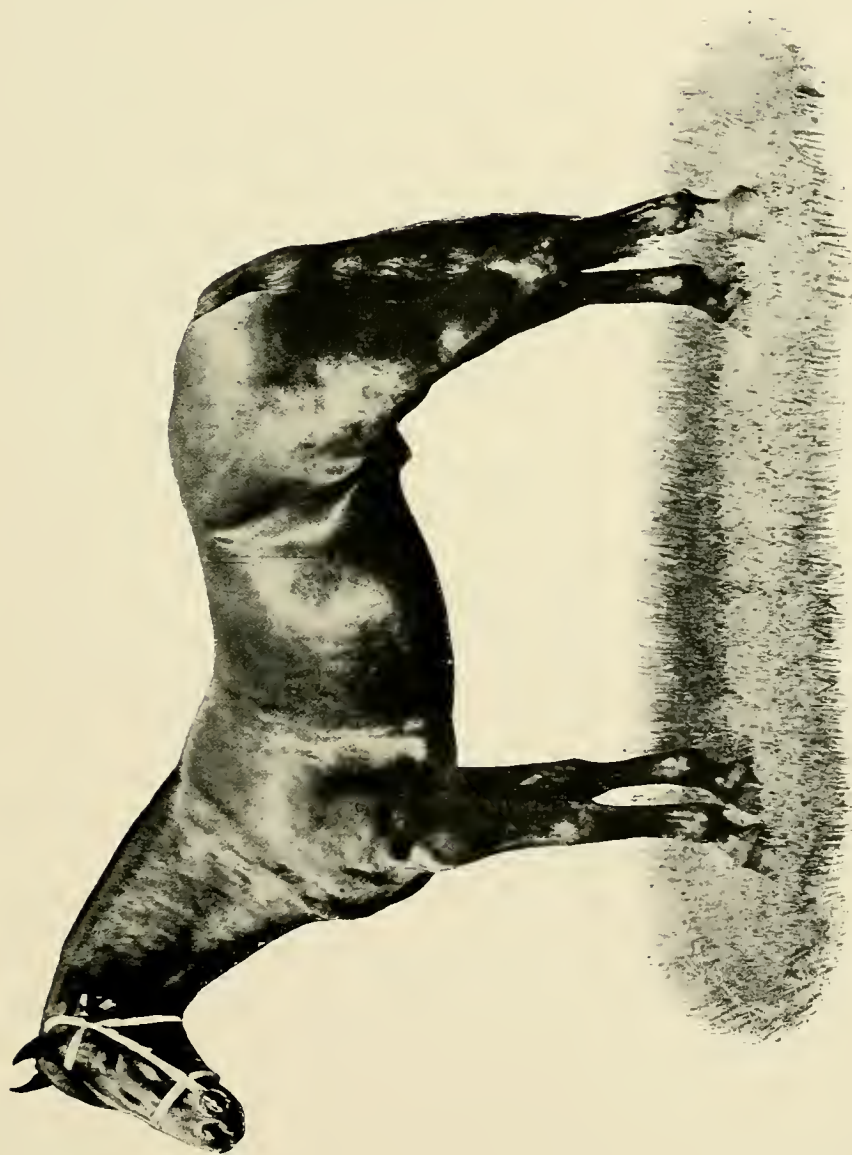
Extending from the last named down to the inner angles of the eyes—commonly occupied in part by a patch of white hair—(the so-called star) there is a flattened area. This is the FOREHEAD. The forehead is continued as the NOSE, until the nostrils are reached, the MUZZLE being formed by the LIPS and NOSTRILS. In some horses, the nasal bones are *convex*, constituting the so-called Roman nose. The areas lying between the ears and the eyes are the TEMPLES, and above each eye there is a small depression—the *supra-orbital depression*. Normally, this is occupied by a pad of fat. With increasing age this usually disappears, so that old and worn horses have a well marked hollow above the eyes.

The CHEEKS comprise the areas bounded behind, and below, by the angle of the jaw, and the segment of a circle drawn from the latter to the outer angle of the eye. Each cheek is occupied by a single flattened powerful muscle known as the MASSETER, the chief muscle of mastication. The triangular space occupying the branches of the lower jaw, is known as the *intermaxillary* area.

The lower lip has a transverse depression immediately behind it, called the *chin groove*, and it is here where the curb chain should sit.

The spaces of the gums between the incisor and molar teeth on each of the lower jaws are known as the “bars.”

POINTS AND EXTERNAL REGIONS OF THE HORSE



TO ILLUSTRATE GOOD ALL-ROUND CONFORMATION.

POINTS AND EXTERNAL REGIONS OF THE HORSE

In horses that are well bred, various bony prominences are plainly indicated beneath the skin, less obvious in coarse bred animals.

There are twenty-four molar teeth, twelve incisor or nipping teeth, and in horses, four tusches are present.

The mucous membrane lining the nose is a bright pink colour, and immediately within each nostril there is a circular opening, the latter being the outlet of the bony lachrymal canal. Normally it is down here that the (tears) moisture from the eyes makes its exit.

THE NECK.—This extends from the withers to the poll, and angle of the jaw.

It has an upper and lower border, the former bearing the mane, and the latter in addition to skin, muscles, etc., has the windpipe, gullet, jugular vein, and carotid artery running along its course.

On either side of it there is a groove, the jugular furrows. The depth of these furrows varies with the condition of the animal. In emaciated subjects the grooves are deep. The upper border, *i.e.*, that bearing the mane, is called the *crest*.

Perfection in this region is best observed in entire horses, and in horses that have been cut late in life, yet this diminishes after castration.

THE WITHERS.—This forms the highest point along the back, and it is here that one measures the height of a horse when the animal is standing on level ground. The withers are

HORSES : THEIR POINTS AND MANAGEMENT

formed by the spinous process of several of the dorsal vertebræ, along with the muscles, ligaments, etc., and corresponds to the tree of the saddle.

THE BACK AND LOINS.—The back may, for convenience, be said to comprise the area lying between the withers in front, and the loins and croup behind.

The loins are bounded in front by the back, posteriorly by the croup, and laterally by the flanks.

THE CROUP.—Comprises the oblique portion lying between the back part of the loins, angle of the haunch (hip), and set on of the tail, the fleshy portion of the last named being called the “*dock*.”

THE FLANKS (right and left) comprise the areas bounded above by the loins, in front by the last rib, behind by the thigh, and below by a portion of the floor of the belly. It is this area (or areas) that becomes specially prominent when the intestines become abnormally distended by gas, arising through fomentative changes therein.

THE ABDOMEN.—The belly cavity is separated from that of the chest by a muscular partition—the diaphragm or midriff—and it is continued, posteriorly, into the *pelvic cavity*, *i.e.*, a division mostly included within the pelvic bone, in which *parts* of the urinary and female generative apparatus is contained. Within the cavity of the pelvis, and like that of the abdomen, it is lined by a serous membrane or peritoneum. The stomach, spleen, pancreas, liver, kidneys, supra-renal bodies, large and small intestines, together with nerves, blood vessels, and glands absorbent, are contained within the belly cavity.

POINTS AND EXTERNAL REGIONS OF THE HORSE

The anterior boundary of the belly is formed by the diaphragm, laterally by the ribs, intercostal and other muscles, behind by the flanks, above by the vertebral bones or spine, and below (the floor) by the elastic abdominal tunic and muscles.

BRISKET, BREAST AND CHEST.—The brisket forms the floor of the chest, being that portion of the anatomy lying between, immediately behind, and in front of, the forearms.

The BREAST lies in front of the BRISKET, though the two terms are synonymously employed, likewise the term CHEST, as indicative of the same region.

Strictly speaking, the chest is principally formed by the ribs, etc., these constituting its lateral walls, the diaphragm or midriff its posterior boundary, and the breast-bone or sternum its anterior portion.

The cavity of the chest is lined by a serous membrane—the pleuræ—and contains the heart plus its great vessels, lungs, nerves, lymphatic glands, etc. This cavity has the form of a cone.

Horsemen sometimes employ the term “well hearted” as indicative of great depth, and width of chest, facilitating the free play of heart and lungs.

THE FORE LIMBS.

THE SHOULDER is composed of a single flattened triangular bone, the outer face of which is divided into symmetrical portions for the lodgment of muscles, and the inner face has a well marked fossa to accommodate a muscle—the subscapularis.

HORSES: THEIR POINTS AND MANAGEMENT

The upper border of the shoulder blade has a flexible plate of cartilage attached to it, and the lower angle of the bone, a cup-shaped cavity for articulation, with the upper end of the arm (humerus), the two forming the shoulder joint. The latter is spoken of as the "Point of the Shoulder."

The junction of the shoulder, and neck, is very obvious in many horses. If an oblique line be drawn from the withers to the point of the elbow, and one from the former to the root of the neck, the area occupied by the shoulder will be included within these lines. The fore limbs have no bony attachments to the trunk, it being a fleshy bond of union.

THE ARMS.—It is surprising how few horsemen are acquainted with the position a horse's arm occupies. The arm corresponds to that portion of the arm of man extending from the shoulder to the elbow of the latter, its bony portion being the humerus, extending from the point of the shoulder, to its junction with the forearm, the *point of the elbow* being formed from the last named (summit of ulna) (olecranon process).

THE FOREARMS.—Each forearm is composed of two bones, viz., the radius in front, and the ulna behind, the latter being the smaller bone.

The forearm articulates with the arm above, extending to and articulating with the upper row of the bones of the knee. The forearms vary in their length and thickness, according to breed and quality. On the inner sides, each forearm bears a castor or chesnut, *i.e.*, a horny prominence.

THE KNEES.—The knees are formed partly by the lower end of the radius, the carpal bones, and upper extremity of the cannon.

POINTS AND EXTERNAL REGIONS OF THE HORSE

The knees differ in their conformation, and may be classified as good, bad, and indifferent.

THE CANNONS.—The term “cannon” is applied to that portion of the leg lying between the knee and fetlock.

In well bred horses nothing but skin, bone, and tendons, etc., should be felt on handling this region.

The cannons of the front limbs are somewhat flatter than those of the hind legs.

The region is composed of the cannon bone, with the splint bones on either side of it. Each of these ends below in the form of a small prominence (the button of the splint bone). The large cannon bone and the two small splint bones form a channel, behind which is a portion of a strong ligament—the suspensory ligament—and the back tendons. In the so-called “clean legs,” all these structures can be plainly felt, or seen, in outline.

THE FETLOCK JOINTS are formed by the lower end of the cannon bone, the upper end of the first phalanx or pastern, and sesamoid bones at the back. There is a tuft of hair (normally) here. This is the ergot or footlock.

THE PASTERNS.—The pastern joint is made up of the lower end of the first phalanx, and the upper end of the coronet bone, or second phalanx.

There is a hollow in the region at the back—the “*hollow of the pastern*.” The term *coronet* or *coronary band* is applied to the cushion, or prominence, encircling the junction of the horn (foot) and skin.

HORSES: THEIR POINTS AND MANAGEMENT

THE FOOT.—The outer portion of the foot (or feet) is known as the hoof, which comprises a wall, upper and lower borders, and the quarters, or lateral portions of the wall.

The “toe” is at the front of the lower border, and the heels are the prominent parts behind. The heels may be “high” or “low,” proportionate length being the most desirable.

The wall is thickest at the toe, becoming thinner as the heels are approached. The sole bears an elastic prominence—the “frog.” This has middle and lateral clefts—the so-called *lacunæ*.

The frog is exceedingly elastic, and ought always to be well developed, so as to act as to give a good grip to ground.

Between the frog and the heels, portions of the wall are reflected inwards, constituting the “bars.”

Within the hoof there is the pedal bone, and a very small shuttle-shaped bone at the back of the latter. This is the navicular bone (*os navicularæ*).

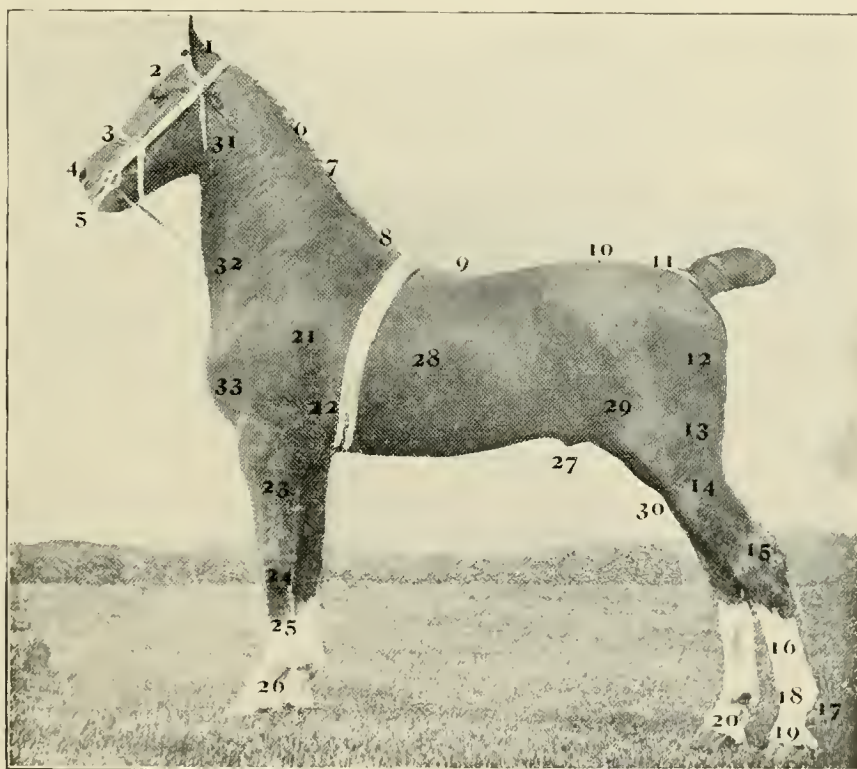
The pedal bone is dovetailed to the inner wall of the hoof, through numerous leaf-like projections covering the bone, which fit into corresponding ones on the inner face of the hoof. These are called the *sensitive* and *insensitive laminae*, respectively.

THE HIND LIMBS.

The only portions of the hind limbs (legs) that it is necessary to refer to are the hip joints, the thighs, the stifles, and the hock joints.

POINTS AND EXTERNAL REGIONS OF THE HORSE

THE HIP JOINTS.—The hip joint is formed by the upper end of the femur or thigh bone, and the cup-like cavity on the outer side of the pelvic or basin bone. If a vertical line be drawn from the summit of the croup through the stifle, and a horizontal line from the latter to the buttock, the hip-joint will be found to occupy a position a little above the centre of



POINTS OF THE HORSE.

- | | | | |
|--------------|------------------------|--------------------------|------------------------|
| 1. Poll, | 10. Loins, | 19. Pastern. | 28. Ribs, |
| 2. Forehead, | 11. Croup | 20. Coronet, | 29. Flank, |
| 3. Face, | 12. Buttock, | 21. Shoulder, | 30. Stifle, |
| 4. Nose, | 13. 1st Thigh, | 22. Point of Elbow, | 31. Posterior Angle of |
| 5. Lips, | 14. 2nd Thigh, | 23. Forearm, | Jaw. |
| 6. Crest, | 15. Point of Hock, | 24. Knee, | 32. Jugular Furrow, |
| 7. Mane, | 16. Cannon, | 25. Cannon, | 33. Arm, |
| 8. Withers, | 17. Ergot or Footlock, | 26. Pastern of Forelimb, | |
| 9. Back, | 18. Fetlock Joint | 27. Sheath. | |

HORSES: THEIR POINTS AND MANAGEMENT

the area thus bounded. This joint has a restraining ligament, thus preventing the lateral or "cow kick," though some horses have a knack of giving such "stylish" kicks.

THE STIFLE.—A joint that corresponds to the knee in man is formed by the union of three bones (ligaments, etc.), viz., the lower end of the thigh bone (the first thigh), the patella or knee cap, and the upper end of the tibia, or second thigh bone.

The knee cap can easily be felt (and seen) riding up and down as the horse progresses. It is frequently displaced (luxated), constituting slipped knee cap—a troublesome injury.

THE SECOND THIGH extends from the stifle to the hock, and the GASKIN comprises the narrow portion of the second thigh, extending from above the points of the hocks, and includes the tendon of Achilles, felt as a thick cord-like tendon extending from the points of the hocks. This is the so-called *ham string*, the division of which has been practised in warfare, to disable the horses of cavalrymen.

THE HOCKS.—Each hock has a front face, and behind a prominence—the point of the hock or heel. This joint is formed by the lower end of the tibia (second thigh bone), the bones of the hock, and the upper end of the cannon bone and splint bones.

Freedom of hock action is even more important than beauty of knee movement, but is seldom paid sufficient attention to by purchasers of horses. During movement a horse should get his hocks well under him.

SECTION C.
THE VARIOUS BREEDS OF HORSES.

THE HUNTER.

THE HACKNEY OR CARRIAGE
HORSE.

THE COB.

PONIES.

THE SHIRE AND CART HORSE.

THE SUFFOLK.

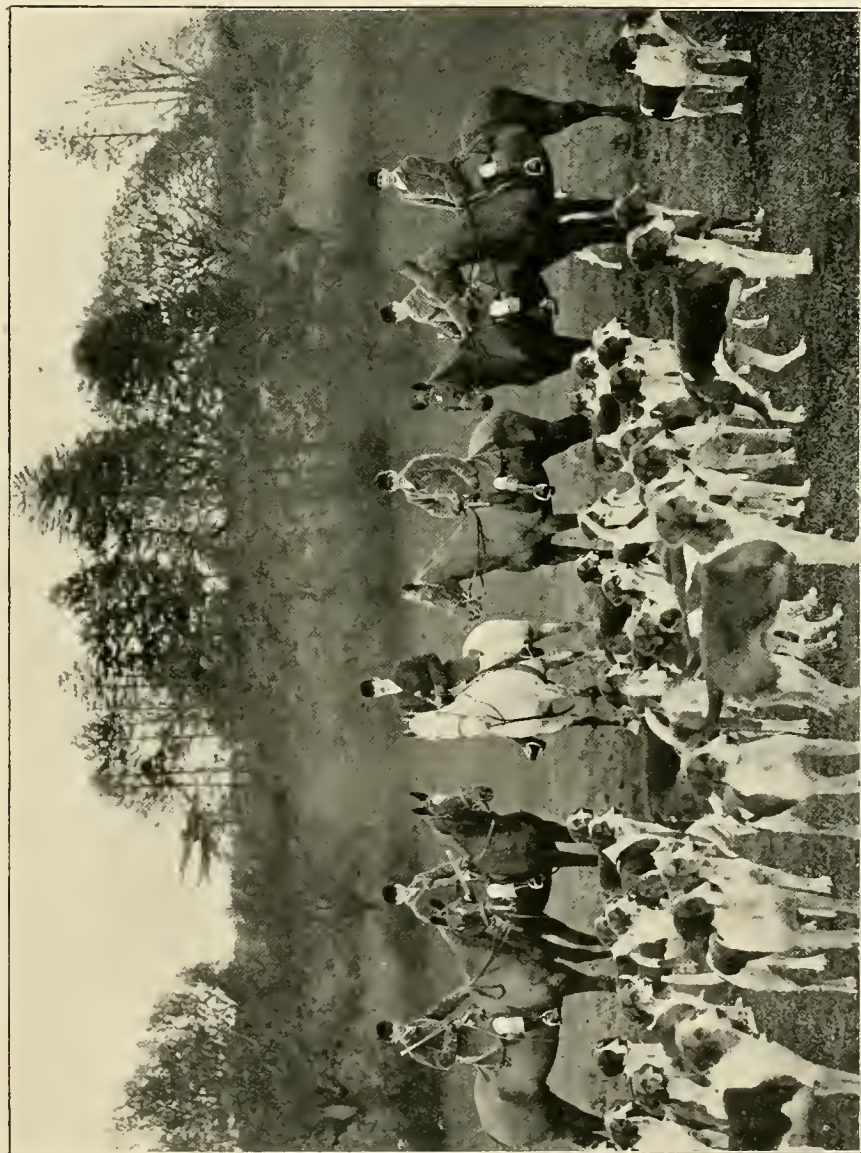
THE CLYDESDALE HORSE.

THE CLEVELAND BAY.

THE THOROUGHBRED OR
RACE HORSE.

CROSS-BRED HORSES AND
VANNERS.

THE VARIOUS BREEDS OF HORSES



THE OLD BERKLEY (WEST) FOXHOUNDS AND MASTER.

CHAPTER III

THE HUNTER.

AS a rule not much difficulty is experienced in obtaining light weight hunters, but when it comes to finding weight carriers, the matter becomes a somewhat troublesome one. For many years the difficulty has been experienced, chiefly because—we now speak of the condition of affairs before that worthy society, the Hunters' Improvement Society, began to show the utility of its formation—the breeding of hunters—if such it could be called—was carried on regardless of system, selection, or fixity of type; in other words, the hunter was *got by chance, and made by choice.*

If horse breeding was worked on such lines as these, the horses of this country—likewise those of other countries—would soon lose (and this is the reason why so many weedy specimens exist) the splendid qualities and qualifications they now possess.

That there have been as good hunters in the past as in the present day, is unquestionably true, but most of these were “chance” productions, and often were moulded into shape by some of the departed followers of the chase, who now live in our minds as *kings of the chase*. In those days the *schooling of the hunter* occupied *first* place, its *breeding second*.

HORSES: THEIR POINTS AND MANAGEMENT

The views in the present day are the very reverse of this, and in the humble opinion of the author, rightly so. By breeding hunters from hunter stock, true or fairly true to type, the progeny of such mating will certainly inherit some or all of the qualifications of their progenitors, therefore the stock from such a source have, as it were, the "dormant" essentials of the hunter born in them, so that "schooling," though secondary, becomes a matter of comparative ease, not only to the *pupil*, but also to the master of his equine scholar. Light weight carrying hunters can, of course, be got by crossing a thoroughbred sire with a hunter mare, but weight carriers are now mostly bred from a selected hunter sire. Anyone interested in the breeding of hunters naturally goes to the Society's Annual Show at the Agricultural Hall, and may there select what he considers most suitable to meet his requirements, either for stock or for stud. The Society will register a stallion two years and above, if got by a thoroughbred or registered hunter sire, and out of a dam registered in the first volume of their stud book, provided the animal is certified sound by a M.R.C.V.S., and approved by Council.

A yearling (filly foal) filly, or mare, may be registered if her sire is a registered hunter sire, or a thoroughbred, and her dam registered in the first volume of stud book. Likewise any mare, filly, etc., can be registered if she has the direct crosses of thoroughbred or registered hunter blood in her veins, such as sire and dam's sire.

Registration can also be effected if her produce has won races under either the Jockey Club or the National Hunt Rules. Mares and fillies are also eligible for what may be termed supplemental registration, but no numbers are allotted. In this case

THE HUNTER

she must be by a thoroughbred, or else a registered hunter sire, who has been awarded one of the gold medals given by the Society at either National, County or Associated Shows.

If her sire be thoroughbred, or a registered hunter, and she is fortunate enough to win or breed a winner at the shows last named, she is eligible for supplement registration.

Lastly, she may be registered in the supplement if a member of the Council and M.R.C.V.S. together with a member of the Society nominated by Council member, approves of her fitness for same. Obviously, the Hunters' Improvement Society do all in their power to admit only such animals as comply with their rules, and the wisdom of this needs no explanation.

The foundation stone for the successful breeding of weight carrying hunters—in fact, any hunters—may justly be said to have been laid when this Society entered upon its successful career.

The writer does not wish to imply that there are no clever—even very clever—hunters outside the circle of the aforesaid Society, because this would be incorrect. Not only in man, but in other animals, and none more so than the horse, do we meet with instances where there is a natural aptitude to perform a certain class of work, or it may be, duty. Hence the brilliant performances witnessed by hunters not connected with the Society, and whose school days have been few, and whose education during the schooling hours has been of the crudest kind. Such a horse is aptly styled a *born hunter* (not made or bred), and well may he merit the title.

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However, these are rather exceptional than otherwise, and does not seriously disturb the systematic breeding of hunters upon a sure foundation.

The *temperaments* of hunters vary in a remarkable manner, in fact, as much as in the human being. *Temperament* is a most important consideration, and must be estimated in accordance with the temperament of the individual that will ride the animal to hounds. Some hunters, even in cold blood, are of a most impetuous nature, and unless cleverly handled, disaster will most certainly, sooner or later, be the issue.

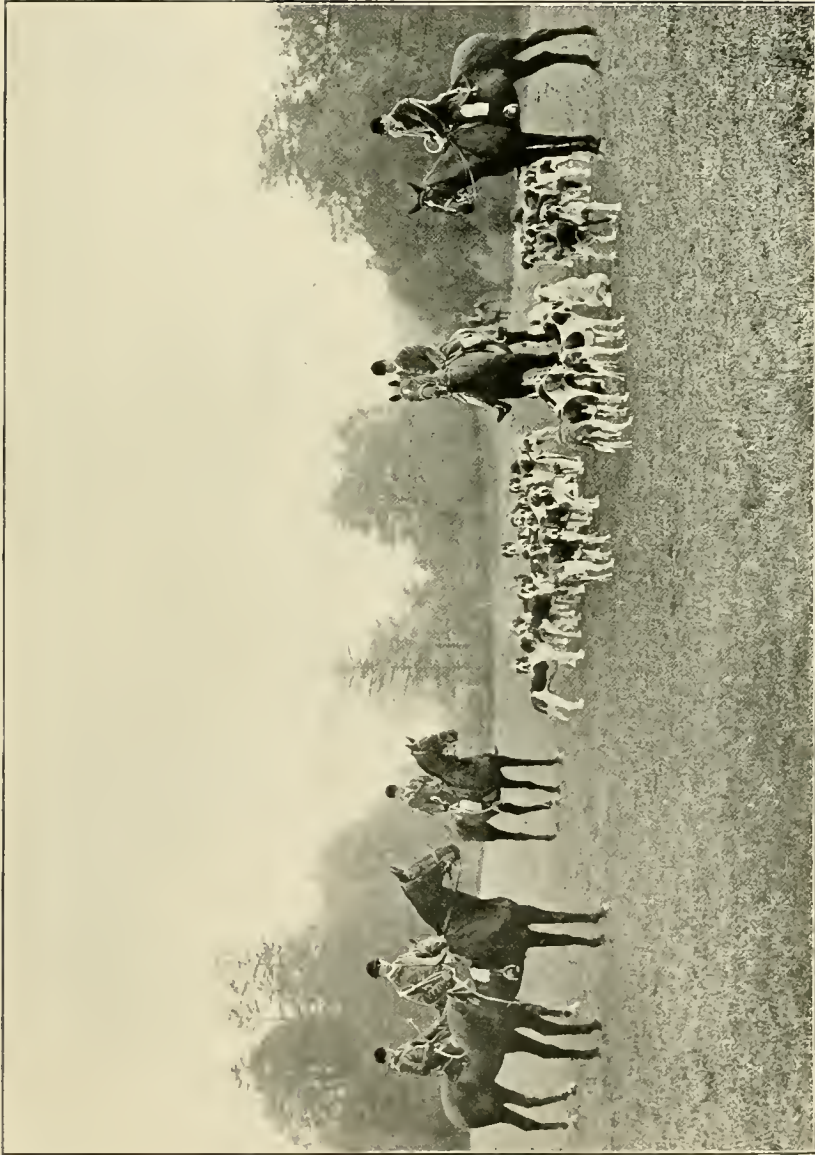
One man may like a steady old thistle jumper, whereas another—one of the devil-may-care sort—will have a hunter that will halt at nothing less than an ox rail—not even at destruction. Hunters that *take-off* in a reckless manner do not, in the author's opinion, conform to his definition of—

“A Hunter born, the Hunter bred
Will freely bend himself;
With measured step his mighty form he'll raise,
And from his Master need no peon of praise,
But clear his 'object' with an ease,
Befitting a Horse of his gentility.”

A steady and docile temperament is a desirable qualification. A horse may be a finished jumper, and yet take his work as cool as possible. Jumping qualifications can hardly be judged in “cold” blood, because many horses are quite cool at their work under these conditions, but make a poor display after hounds.

Temperament and jumping abilities can only be estimated under both the foregoing conditions, and it is advisable for the would-be purchaser to try in accordance therewith. Jumping

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THE OLD BERKLEY (WEST) FOXHOUNDS.
R. LEADBETTER, ESQ., *Master*.

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HUNTER SIRE, "DUBIGNE."
Owned by Dr. HAZELWOOD, BUNTON,

THE HUNTER

and trying a hunter on the premises of a horse dealer is not always a great success, at any rate as far as the buyer is concerned. It is, if possible, advisable to have a hunter on trial, or if this is not convenient, the intending purchaser should ride a horse to hounds on several occasions, and if he has confidence in his own abilities as to his horsemanship, he will be in a position to judge the *faults* that the animal has, remembering that it is the *business* duty—allowing for the elasticity of conscience attending such—of every *seller* to *praise* the *quality* of his wares, and of the *buyer* to look for the *converse*.

Some men believe in *trying* to find out all the “good” points about an animal—its redeeming features—but to do this with horseflesh is most certainly seeking quicksand.

Returning to the subject *re temperament* one may safely assert that elderly riders, those of nervous temperament, ladies, and youths, should only be allowed to ride hunters proved to be cool at their work, and free from vice in other ways. Age has an influence, and so has sex, over temperament. Aged horses are more subdued as a rule, and some mares are more excitable than geldings. The latter is not of much importance, so that sex should not be allowed to interfere, provided the animal is suitable in other respects.

Too much care cannot be exercised in the purchase of a lady's hunter, more especially when one considers how she is situated as regards her seat. Before concluding purchase, the lady should try the animal herself, and not be influenced by what others say, but use her own intelligence as to suitability or otherwise of her mount. Six or seven years is quite young enough to purchase a lady's hunter, and one that has been regularly hunted (and jumped) by a lady should, if possible, be

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obtained. Many Irish hunters are very clever, and numbers of these find their way into the English market—public or private.

As to height, much will depend upon the country hunted, and the height and weight of the rider. For a boy's hunter a pony thirteen to fifteen hands is about right height, and the stamp of pony rather light-legged. Equally important to temperament, is that of the mouth. A hard-mouthed horse, no matter whether it be a hunter, hack, or roadster, is not only objectionable, but often a very dangerous brute, as the writer, amongst others, has experienced. I for one would not purchase such a horse at any price. If not an actual cause of danger, to ride or drive a horse of this class, converts *what should be a real pleasure* into one of *manual labour*.

A hard-mouthed horse though influenced, to some extent, by careful "bitting," always remains practically the same. *Select a horse that readily responds to the "aids,"* and don't spoil him with an *abuse* of these when he does do so. About sixteen hands may be put down as the average height for a hunter, but in the horse jumping competitions at the Royal Agricultural Society's Show the following classification is given :—Class A, Mares and geldings, 15.2 hands and over. Class B, Mares and geldings, above 14 hands, but under 15 2 hands. Class C, Pony mares or geldings, 14.2 hands and under. To be measured for height, but not examined for soundness. In the Hunter Classes mares and geldings can be entered up to 14 stones and upwards, and under 14 stones foaled before or during 1900.

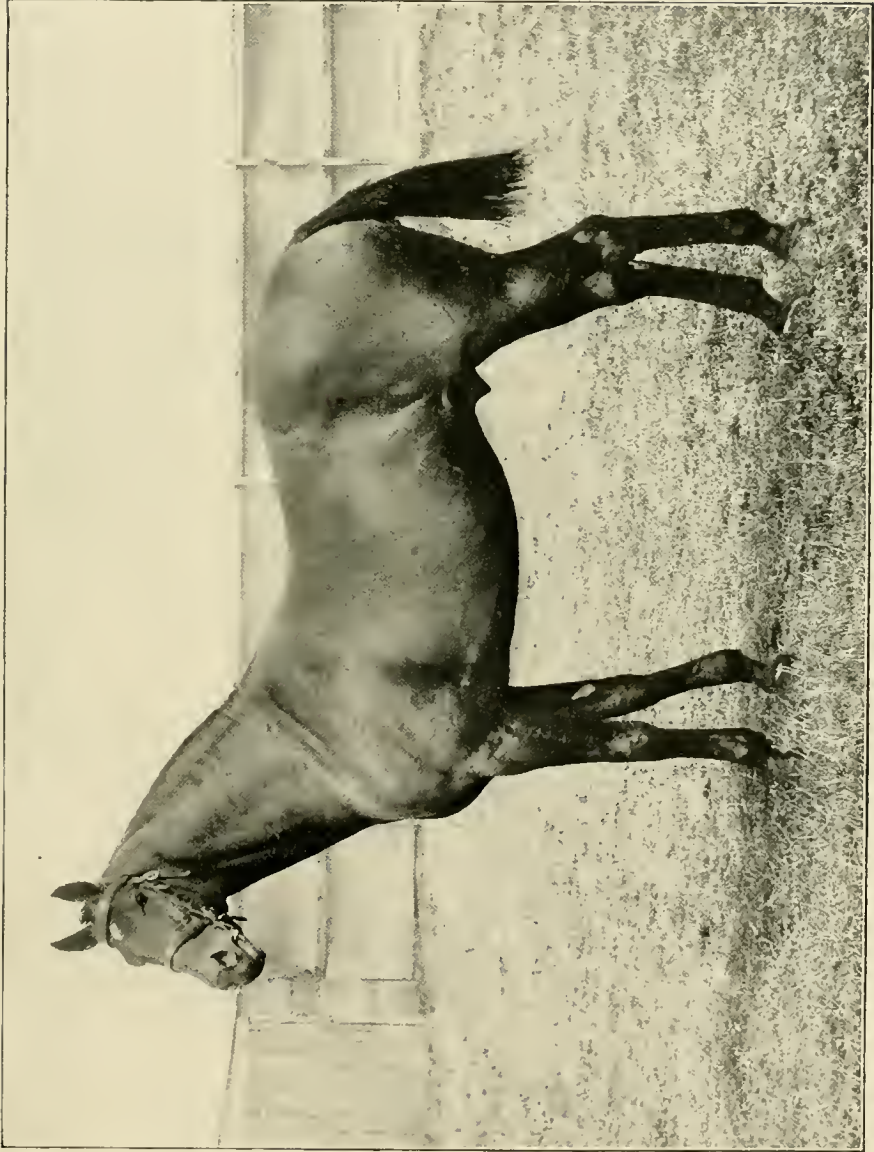
Brood mares undergo veterinary examination, and a hunter will be disqualified if *entered as a light weight*, yet the *judges*

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A TYPICAL HUNTER'S HEAD AND NECK.

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HUNTER SIRE, "RIVERSTONE."
Owued by E. W. ROBINSON, ESQ., Brookleigh, Esher, Surrey.

THE HUNTER

consider that such an animal can compete in the *heavy weights*, and the converse.

Having briefly discussed the outlines relating to temperament, mouth, height, weight, etc., the writer will now review the chief points essential for a typical hunter.

THE HEAD should be "light," sharp, well chiselled in outline, and covered by thin skin and fine short hair ; ears small and erect. If the head is coarse or heavy, the chances are that the animal's temperament and intelligence will be equally "door," or blunted.

NECK.—This ought to be of medium length, and its carriage inclined to be "lofty," so as to give a light forehand.

LONG SHOULDERS and rather HIGH WITHERS are points of considerable importance, shoulder and hock action, constituting the hunting man's ideal points for a hunter ; in fact, it cannot have too extravagant action in either of these regions. The question is what constitutes *long* shoulders, and how can the buyer distinguish a long from a *short* shoulder ?

To those acquainted with examining horses in detail the matter is easy, but to the novice not so. A little practical advice will perhaps do more than theoretical elaboration. Look at the shoulders of a race horse and then at those of an inferior bred vanner. The difference will at once be obvious. Not only must the shoulders be long, but give evidence of good muscular development.

A hunter must have strong arms and forearms, ending at the knee in broad, strong, and freely flexible joints ; stiff knee joints, though the knees may be very much blemished (banged knees, etc.), are fatal to jumping.

HORSES: THEIR POINTS AND MANAGEMENT

Cannons and feet should be free from disease, though hunters' feet are not subjected to the same amount of constant concussion as that of the hackney, unless the master requires the dual performance of office, viz., half hack, or hackney, and half hunter.

BACK AND LOINS.—A strong back and flexible loins are imperative in a hunter, owing to the bending movements, hence the necessity for trying the animal so as to throw these parts into full play.

There is a natural inclination in old horses towards "fusion" of the lumbar or loin vertebræ, and this destroys the normal flexibility of the part.

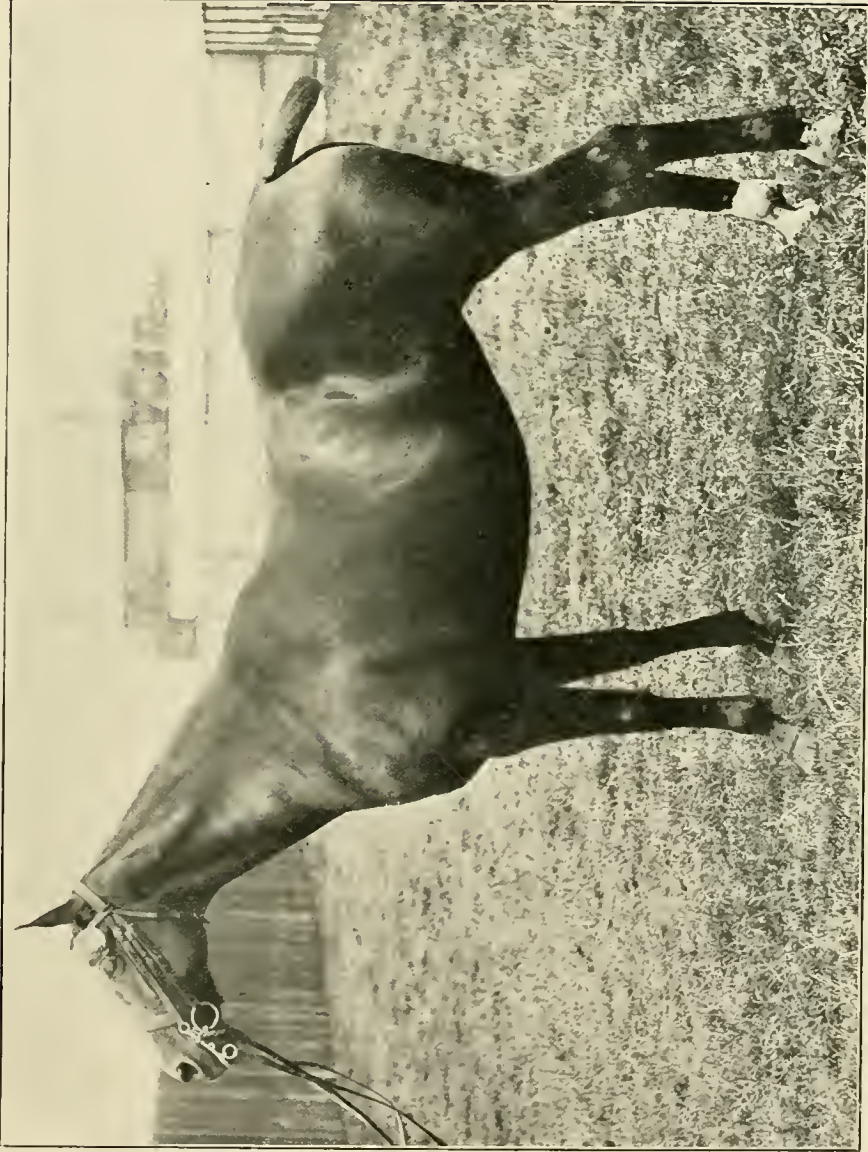
HIND QUARTERS AND HOCKS.—The croup and first and second thighs must be well muscled, of good conformation, and free from disease, blemishes being of secondary importance.

Thoro-pin occurs just above the point of the hock, but it is not often that it produces lameness, yet it is regarded as constituting unsoundness.

It is denoted by swelling—not with any heat as a rule—and manipulation with the finger presses the fluid from the "in" to the outside, or *vice-versa*. *Curb* is not at all uncommon in hunters, and in some of these it never does any harm, but in others it is a cause of lameness. It appears as a *convex* swelling two or three inches below the *point* of, and in a *line* with, the hock. Some horses have large curbs on both hocks, or a large one on one side, and a small one on the other.

A hunter ought to be very "clean" and sound about his hocks, knowing that he has got to make particular use of

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HUNTER BROOD MARE, "LADY MARY" (WINNER OF 30 FIRST PRIZES).

Owned by E. W. SCHWABE, Esq.

THE HUNTER

them. Good substantial (broad below), sound, well built hocks, are very necessary for a horse of the chase.

Bone spavin is objectionable, no matter what views one may entertain regarding it, and it is needless to say that the majority of veterinary practitioners *condemn* for it.

If a hunter cannot get his hocks *well up and well under* him, he or she—as the case may apply—is not much good for jumping, though it may be all right for dodging around the covert side, certainly not for a Nimrod or Jack Mytton.

Regarding the *soundness of hunters*, it is necessary to say a few words. A hunter ought to be sound in *heart, lungs, and eyes*, more commonly put as sound in *wind and sight*. If the *heart* is not healthy, the “wind” will not be right, though the animal may neither be a “roarer,” whistler, nor broken winded. During severe or prolonged exertion, if the heart is not sound, an attack of cardiac syncope may come on, and the animal tumble at his jump.

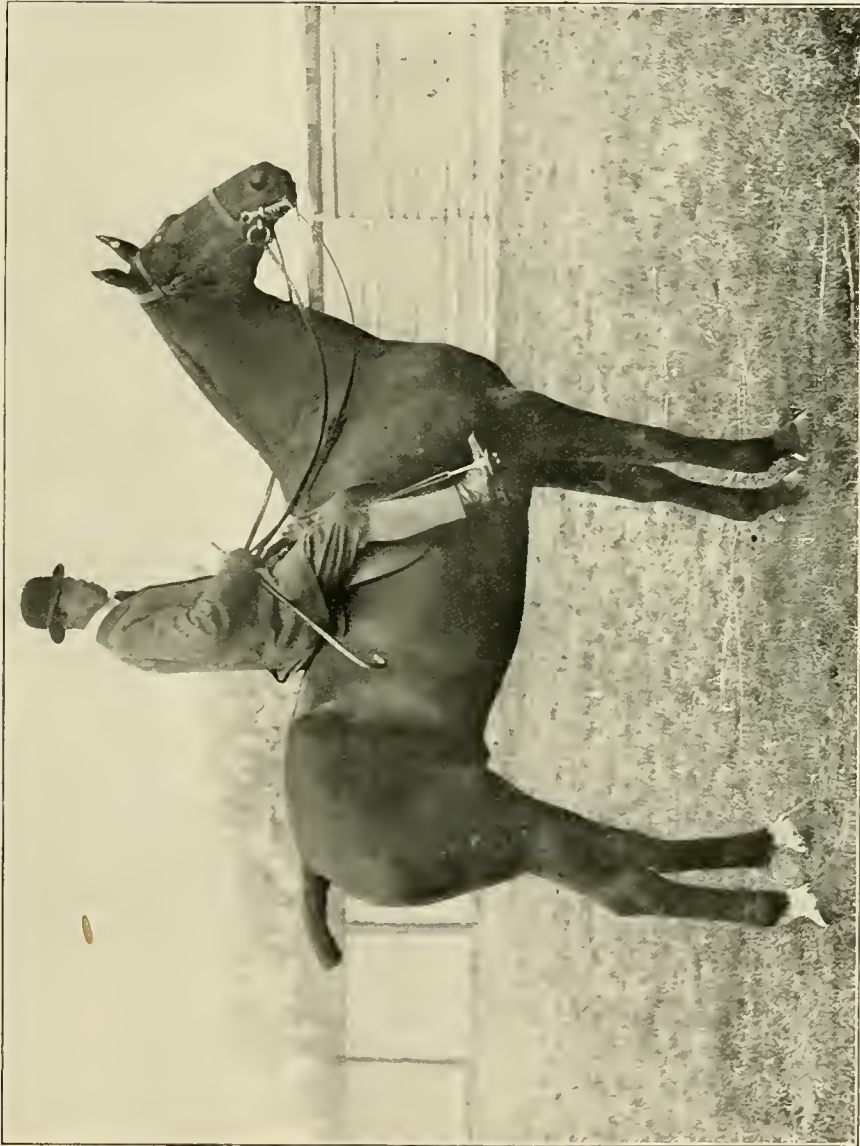
It is of vital importance to the hunting man to have his horse's “clock” all right. An *intermittent*, or an *irregular pulse is quite sufficient to condemn a hunter*. Apart from a speculative opinion as to what “might happen,” the lungs are not properly supplied with blood when the heart is enfeebled. *Rearing* arises through a variety of causes, commonly through organic changes of certain muscles adjusting the larynx, in all probability, through defective nerve force. Although many hunters make a “noise,” the value of such—commercially at least—is small, and the author does not advise anyone to purchase, unless it be a rider that does not object to this embarrassed breathing. Very careful examination of eyes should be made,

HORSES: THEIR POINTS AND MANAGEMENT

such defects as cataract, short-sightedness, displacement of the corpora Nigra (pigmentary bodies), opacity of cornea, etc., all destroy the value of a horse, more especially of a hunter, steeplechaser, etc. This shows one how expedient it is for thorough overhauling by a M.R.C.V.S. before purchasing, and the author commends this statement to the notice of any gentleman contemplating purchase of any class of horse.

Never trust the purchase of a horse to those who “pretend” to know so much, and whose knowledge exists in imagination only, neither should one allow the unqualified or unregistered veterinary surgeon to examine a horse as to soundness. Such vicious habits as weaving, wind-sucking, crib-biting, pawing in the stable, are very objectionable, though do not *necessarily* interfere with the general utility of a hunter. Dangerous vices are those of kicking, bolting, etc., and should condemn any horse. These latter are the worst forms of vice, and *incurable*.

THE HUNTER



HUNTER GELDING "BARONET."

Owued by MR. J. H. STOKES, Market Harborough. (A big Prize Winner)

THE HACKNEY OR HARNESS HORSE



TYPICAL HACKNEY HEAD AND FORE QUARTERS. "HIS MAJESTY."

CHAPTER IV

THE HACKNEY OR HARNESS HORSE.

HISTORY.—There is a general concensus of opinion that the hackney has been derived by selection from an Arab horse brought into this country from Aleppo (1706) by a Yorkshire gentleman known as Mr. Darley ; henceforth the imported animal was spoken of as the “ Darley Arabian,” and the wonderful influence this Oriental sire had, in the production of the hackney, is obvious, by brief reference to some of his earlier descendants.

Not only does the modern “ hackney ” owe so much to the Darley Arabian, but also the race horse, this illustrious Arab sire being one of the three chiefly concerned in the production of the thoroughbred. The famous “ Eclipse ” (foaled 1764), was by “ Marske,” and the latter a great-grandson of Mr. Darley’s imported horse. In the year 1715, a chestnut horse, with a white muzzle and four white stockings, known as “ Flying Childers ” (named after his breeder, Mr. Childers), was foaled.

The sire of this horse was the “ Darley Arabian,” and the dam, “ Betty Leedes.” It is said that “ Flying Childers ” was of compact form, long in the back and loins, and about 15 hands in height.

HORSES: THEIR POINTS AND MANAGEMENT

Like "Eclipse," he appears to have been a remarkably fast horse, and transmitted his excellent qualities to his son, "Blaze," foaled during 1733, who afterwards travelled in Norfolk, hence the reputation this county obtained for the excellency of its hackneys, or Norfolk trotters.

"Blaze" was the sire of the first "Shales" (there being several "Shales" to name), foaled in 1755, and the grandsire of "Driver," foaled ten years later, and from this horse Jenkinson's "Fireaway" and West's "Fireaway" were derived. The first named was foaled in 1780, and the latter in 1800. West's "Fireaway" was the sire of Burgess's "Fireaway" (1815), and the latter the sire of "Wildfire," foaled in 1827.

During the season of 1835, a son ("Phenomenon") was foaled, and five years later "Phenomenon" produced "Performer," and he in turn "Sir Charles" (1843), and the latter "Denmark" the sire of that remarkable hackney "Danegelt," foaled in 1879, and who died at the age of fifteen years, after a remarkably brilliant show and stud career.

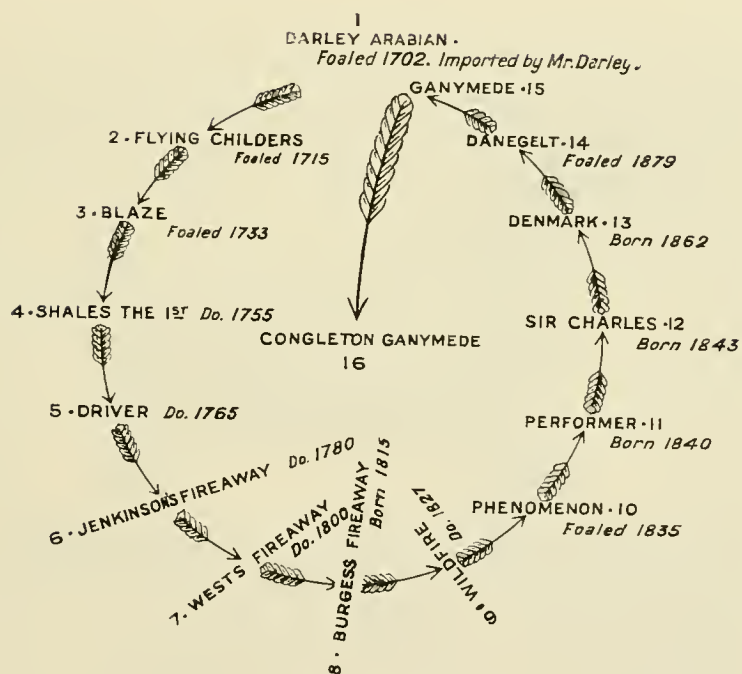
When "Phenomenon" was about three years of age, Mr. Bond, of Cawston, Norfolk, sold him to Mr. H. R. Phillips, and he in turn handed him over to Mr. Robert Ramsdale, of Market Weighton, for the purpose of crossing with Yorkshire mares, in order to improve the breed of roadster at that time in the county, as these animals were wanting to size, style and action. In this way there resulted a *Yorkshire* type of hackney or roadster, bigger, and with more substance than those produced in Norfolk, so that there is the same credit due to Mr. Ramsdale regarding the moulding of the present type of hackney, as Mr. Bakewell, of Dishley, did towards improving the shire.

THE HACKNEY OR HARNESS HORSE



"MAYFIELD LILY LANGTRY," (17.50t).
The property of CAPTAIN GORDON MCKENZIE.

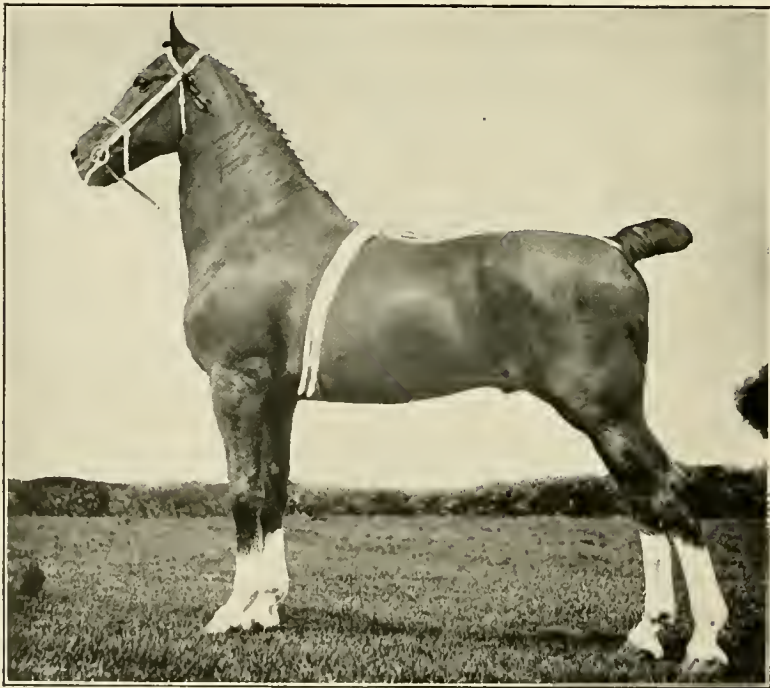
THE HACKNEY OR HARNESS HORSE



CYCLE TO ILLUSTRATE THE PEDIGREE OF THE HACKNEY e.g.
"CONGLETON GANYMEDE."

HORSES: THEIR POINTS AND MANAGEMENT

The Hackney Horse Society, by the registration of pedigrees, its annual London Show, and encouragement (through a multiplicity of channels, by means of money and other prizes), towards owners of this class of horses, has exercised the most profound influence in maintaining and improving the hackney or harness horse.



HACKNEY ENTIRE.

The good work done by this Society leaves little to be desired, and it is the writer's wish that it will continue to flourish, and exercise its beneficial influences over the breeding of one of the most useful varieties of horse in this country, so rendering horse breeding at home a profitable occupation.

THE HACKNEY OR HARNESS HORSE

POINTS, ETC.—Speaking in a practical manner, when purchasing a harness horse, or pair of these, it is not usual to make any inquiries regarding the pedigree of the animal offered for sale. There is an old axiom that a well bred horse should carry his pedigree about with him, and, to a certain extent, this is true. Most dealers would be highly amused if the intending buyer demanded a pedigree, and, if this became a general custom, bogus pedigrees would become as common as cobble stones.

Well bred horses can be purchased without any history of their antecedents, but such would be of no use to the breeder of typical hackneys. A sire and dam, with a good pedigree, and of the right sort, will, under favourable conditions, as a rule, produce offspring fairly true to type.

The reason why there are so many weedy roadster horses all over the country, is chiefly owing to injudicious selection in mating, and the exportation of the best animals from this country. Take the average harness horse, such as one commonly sees running in broughams, landaus, etc., and it will be found that fully one half are of bad conformation, sluggish movers (daisy cutters), vicious, or showing evidence of coarse breeding in other ways. A hackney true to his line of descent has none of these bad qualities, and to purchase such an animal, from a breeder of repute, is to *some* extent a guarantee of style, action, and manners. Another point will also have been gained, namely, that of having purchased an English bred horse; most of the West End carriage horses being foreign ones, coming from Italy, Germany, France, Hungary, etc.

With regard to colour, dark chestnut, light chestnut, roan, bay, bay-roan, brown, chestnut, and grey-roan, also dun and iron-grey, are the prevailing ones. White points are very

HORSES: THEIR POINTS AND MANAGEMENT

general amongst typical hackneys, and the writer is an admirer of such. Purchasers of roadsters often object to white markings, so do many coachmen, preferring black points, for various reasons.

Many light chestnuts have the so-called "mealy legs," so strongly disliked by some people. Dark chestnut, dark bay, or brown, are durable colours, and easy to match.

White or cream we do not recommend, unless the animal has exceptional merit in other ways. As to height, a general one for typical hackneys is 15 or 15.1 to 16 hands. Many Scottish bred hackneys are over 16 hands.

Hackney cobs are about 14.2, and ponies under 14 hands. For general roadster work 15.2 or 15.3 is a suitable height. Victoria horses should be as near 15 hands as possible, and for waggonette work, more especially if the country is hilly, hackneys 16.2 or thereabouts ought to be selected.

With reference to the most suitable age for purchasing, if much hard work has to be got out of the animal, we recommend a six year old. To work a horse regularly at four, more especially in town, is detrimental, and bound to end in premature injury to him, one way or another. Five years is not a bad age to purchase, provided the animal is honestly used, so many young horses being ruined by reckless driving.

SEX.—It is preferable, for town work, to purchase a gelding, though, given a good mare, there need be no hesitation as to buying.

For breeding hackneys, select good roomy mares, free from ringbone, bone spavin, roaring or whistling, and string-

THE HACKNEY OR HARNESS HORSE.



THE WORLD RENOWNED HACKNEY STALLION, "HIS MAJESTY."

Bred by J. Jones, Esq., White Gate, Wrexham.

THE HACKNEY OR HARNESS HORSE

halt ; with feet of proportionate size (no sidebone), good shaped hocks, and with good hock action. Fore limbs to be well placed and of good conformation. Avoid using a bad tempered sire or dam to breed from. Returning to the points of the hackney—

THE HEAD should be straight in front from ears to nose, covered by thin skin, and fine soft hair. Eyes, full, with keen expression, and the ears thin, well carried, and covered with fine hair. The outlines of the jaws, and various prominences in the facial region, ought to be discernible through the thin skin of the typical hackney, in fact, in any well bred horse. Coarse breeding frequently shows itself in the region of the head. The head may be too heavy, or too light.

Defective sight, swollen glands, roaring or whistling, diseases of the grinding teeth, and a chronic discharge from nose, are the chief causes of *unsoundness* in this region.

THE NECK.—This should be full and round, covered by thin skin and well carried. Typical hackneys have usually brilliant head and neck carriage, and this without the use of a bearing rein. Full development of neck muscles constitutes one of the essentials of beauty in this region. Never buy a horse with a weedy neck, or one that has a bad carriage of head. Chest of medium width, and deep at girth.

SHOULDERS.—Oblique ; arms of moderate length and strong. On the inner side of the elbow and a trifle below it, an operation known as median neurectomy (unnerving), to remove lameness, is often performed, evidence being afforded by the presence of a slight scar. Such a horse is sometimes spoken of as having been *undone*, rendering its market value nil.

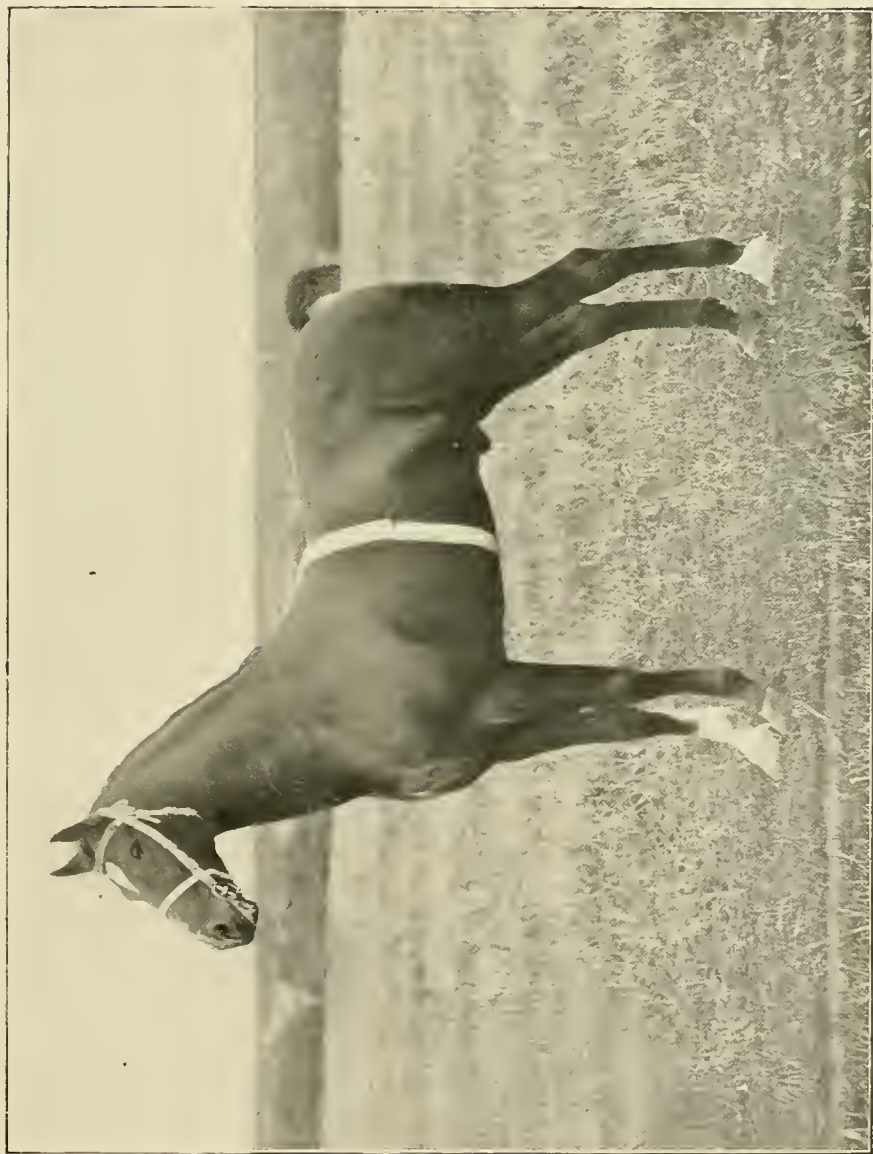
HORSES: THEIR POINTS AND MANAGEMENT

FOREARMS.—Good quality is indispensable in this region. Should be big in the bone, well muscled, and of medium length, but wide from front to back, clean and strong at junction of knees. Capped elbow is a common defect. Knees of good shape, and free from blemish. Many hackneys have an extravagant degree of knee action, but it is wonderful to note how carefully they place their feet on the ground, so as to diminish concussion. For saddle (hack) work this is undesirable, and reminds one of the expression that “a hack is a horse to ride, but a hackney one you should not ride.” We hear that hackney breeders will not readily accept this axiom. Grace and elegance of movement should come from shoulders, knees, and hocks—the latter action far too often ignored.

CANNONS.—Broad at junction of knee, wide from front to back, and covered by fine hair and thin skin. To be typical, nothing but skin, bone and tendon ought to be felt at this region. Many roadsters are deficient in bone here. There must be strong cannon bones if the horse has to wear well. *Splints are the worst defect about this part.*

Splint often gives a lot of trouble, and the author always rejects roadsters for it, no matter how small, or where situated. This opinion need not influence the buyer to an undue extent, because so many horses having splint, remain sound, but with a professional examination for soundness, the matter is different. Never buy a horse with splints close to back, or side of knee. Obscure forms of lameness frequently arise, through very tiny bony deposits in the channel of the cannon. Speedy cutting bad. Sprained tendons, and breakdown, also occur in this region, the low operation of unnerving, being performed

THE HACKNEY OR HARNESS HORSE



HACKNEY STALLION, "DISSENTER."
Owned by the Hon. Mrs. Ward, Old Colony, North Wales.

THE HACKNEY OR HARNESS HORSE

at the hollows of the fetlock. Windgalls are common at the latter.

PASTERNS.—To be of moderate slope, proportionate length, and free from coarse hair, or any bony enlargements. One of the worst faults that a roadster can have—and very commonly they have such—is that of having either short, upright pasterns, too long, or pasterns that are oblique. Bony enlargements about the coronet, pastern, and fetlock are frequent, and of course detract greatly from the animal's value, not necessarily its utility. Brushing often very troublesome. The elastic plates of cartilage at the back and upper part of the hoof (on a line with the coronary band) may be calcified, otherwise the horse have *sidebone*. This is very detrimental, though even a roadster with sidebone may go sound. It is not the rule.

FEET, FORE AND HIND.—If a horse has not the best of feet, the less one has to do with it the better. Compare both fore feet, and then these with the hind ones. Inequality in size will be better seen in this way. Typical feet must be proportionate.

Small feet are bad, but we would sooner select a horse having them, than one with big feet. A big-footed roadster brings too much concussion upon his horny box, and the delicate structures within it are in time injured.

Contracted foot (or feet), navicular disease (indicated by short cat-like step, lameness, wearing of shoe at toe, and pawing); flat sole, corn, thrush, chronic founder, sanderack (fore and hind), and seedy toe, are the principal defects about the feet. Beware of

HORSES: THEIR POINTS AND MANAGEMENT

hot feet, and horses shod with pads and leathers, when buying a roadster. Sidebone occasionally present.

BACK AND LOINS.—Back rather short, but strong, and the loins long and well muscled.

CROUP, THIGHS AND BUTTOCKS.—Croup somewhat short, but not over sloped. First and second thighs long, strong, and powerful. Buttocks well rounded and firm.

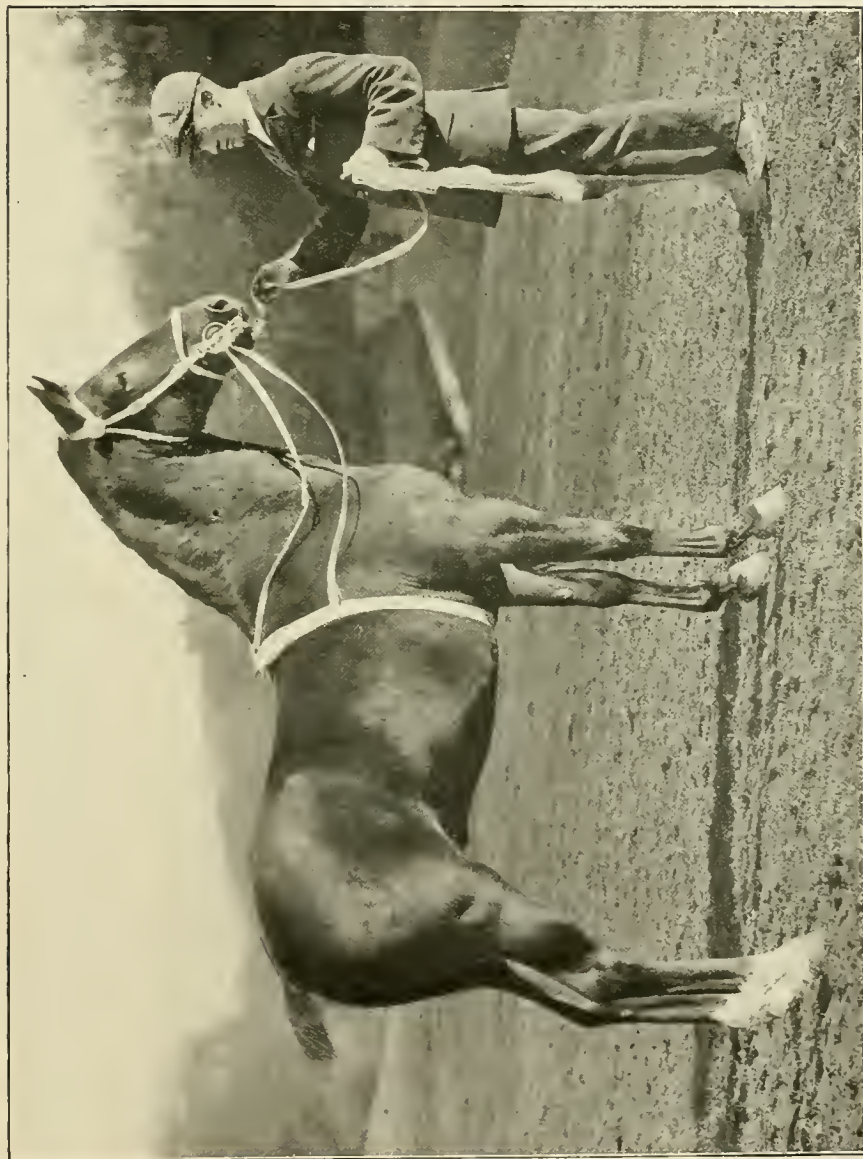
Strong, clean, well shaped, and well placed hocks are of the greatest importance, the hind limbs being the propellers of the body. Capped hock may be present.

Judges of hackneys, roadsters, etc., give a great deal of attention to these regions. Upright, flesh, coarse, over-bent, and puffy hocks, are detrimental.

Bad hock conformation often reads, “predisposition to disease,” puffy hocks, sprung hock (enlarged all over it), bone spavin, and thoro-pin, constituting unsoundness. The first named is often spoken of as “bog” spavin. Curb, when present, will be seen at the back, below, and in a line with, the point of hock. One or both hocks may be curby. It is, of course, an unsoundness, though many big curbs never cause lameness.

CHEST.—Deep and of good girth. Ribs well sprung, and flank thick, so as to make the belly almost level with the floor of the chest. Weaving, wind-sucking, crib-biting, and other vicious habits, are detrimental to a greater or less extent. Courage, speed, harmony, with a compact, well coupled body,

THE HACKNEY OR HARNESS HORSE



HACKNEY STALLION, "MONTE CRISTO" (7933).
The property of SEAHAM HARBOUR STUD.

THE HACKNEY OR HARNESS HORSE

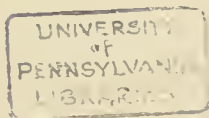


TYPICAL HACKNEY (IN PROFILE).

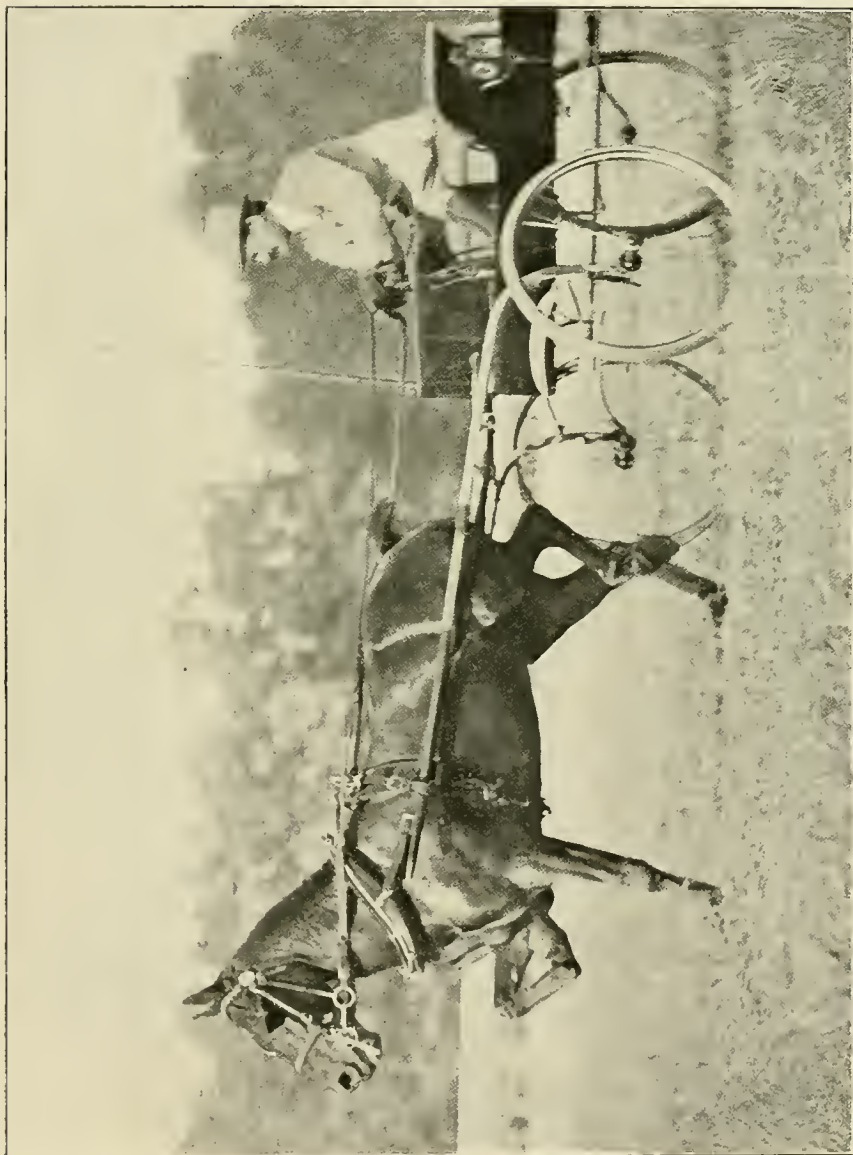
THE HACKNEY OR HARNESS HORSE

and proportionate limbs, constitutes the *ideal* hackney. It is hardly needful to mention that broken wind (indicated by a chronic, hollow-sounded cough), renders the animal valueless.

With reference to age, the writer's opinion, if for immediate work in town, is that a horse at five, six, seven or eight years be purchased, certainly not before four or after eight years.



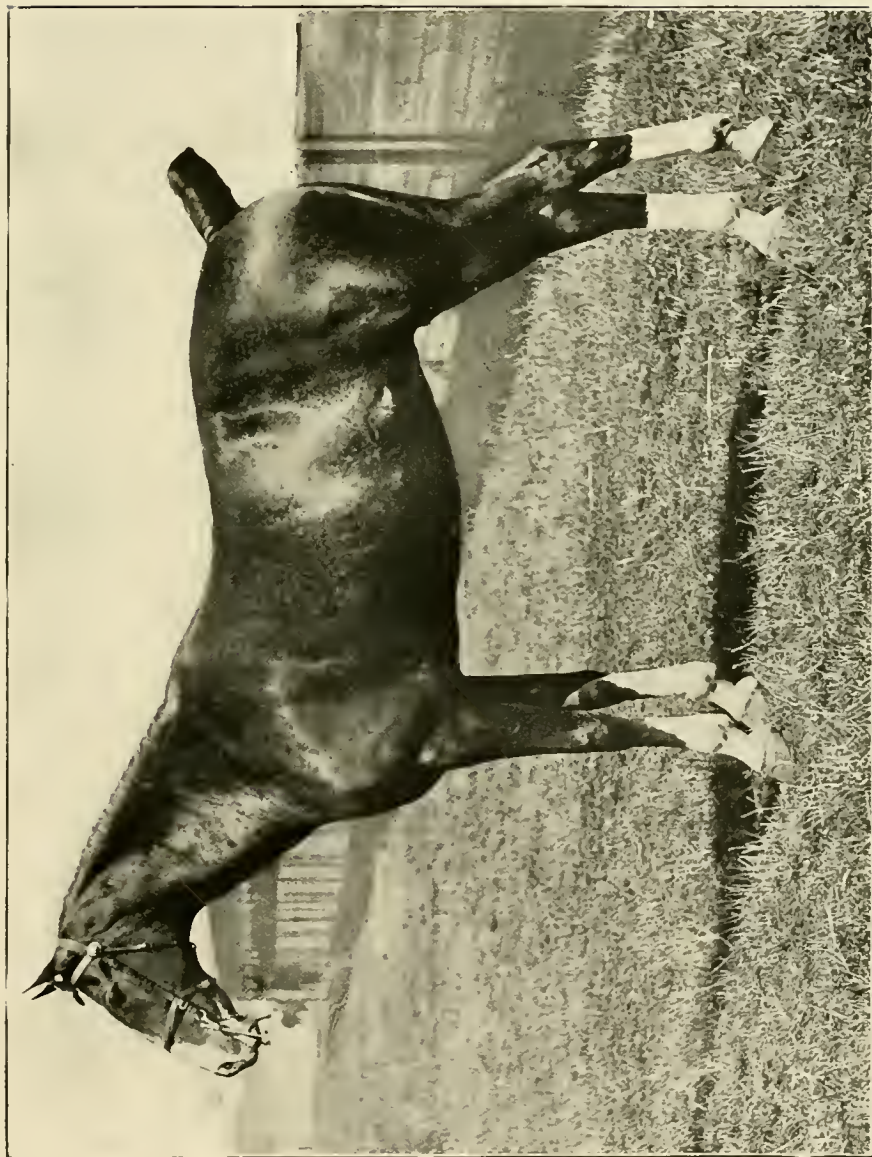
THE HACKNEY OR HARNESS HORSE



HACKNEY "GOLDEN FLAKE."

The property of CAPTAIN GORDON MCKENZIE, Brookenhurst Stud, Danchurst, Hants.

THE HACKNEY OR HARNESS HORSE



HACKNEY MARE, "ROSADORA" (A HUGE PRIZE WINNER).
Owned by W. B. THOMAS, Esq., Mill Hill, London.

CHAPTER V

THE COB.

ABOUT 14 or 15 hands, certainly not above 15.2, is the right height for a cob, anything beyond or below this height ought not to come under this category. When selecting a cob for roadster purposes, it is advisable to try and find one having fairly high, good all round action. Many horses have good foreleg action, but very little behind, which is equally or even more important.

For saddle purposes, high action is not wanted if comfort to the rider be studied. A slightly flat side is also better for saddle purposes, whereas in a roadster cob the ribs should be well sprung. Short legs, a short arched neck, with nicely sloping shoulders, broad and flat knees, rounded canons, moderately long, oblique pasterns, with neat, well placed, and well directed feet, are essentials. Of no less importance is a light forehead.

The knees ought to be broad, neatly shaped, flat at the front, and free from scars or other blemish. The head should be carried obliquely, finely modelled, not the heavy headed brute so often seen—and a mouth that responds immediately when asked. A deep chest, and clean hocks, covered by thin skin, are requisite. The canons should be seen as skin, bone and tendon, without any packing, and free from puffiness about the joints.

HORSES: THEIR POINTS AND MANAGEMENT

COLOUR.—This is a matter of individual taste : bay, brown, light or dark chestnut, red and blue-roan, white, grey, etc.

A typical cob should look smart, graceful, and be full of animation, associated with the best of manners.

With reference to breeding of colts of this description, the best results are probable if a small thoroughbred sire is put to a small hackney mare.

Weight-carrying cobs (up to fifteen stone), are not always easy to find, moreover, there is a ready market for good ones.

Orkney cobs are as a rule stoutly built, and large numbers are imported into Aberdeenshire. These animals are somewhat coarse, but generally good tempered, and not at all unsuitable for covert cobs, having the advantage of being purchasable at small prices.

Russian cobs come to this country by the ship-load. They are extremely hardy, have not much appearance, but if properly broken, make serviceable roadsters for tradesmen's work.

THE COB



WELSH COB.
The property of MESSRS. JONES, Colwyn Bay

THE COB



WELSH COB (A BIG WINNER).
The property of JOHN JONES AND SONS, Dinarth Hall, Colwyn Bay.

CHAPTER VI

PONIES.

THE pony has always been popular, but probably never more so than at the present time, more especially the show pony. The utility of these diminutive horses can hardly be over estimated, the amount of hard work that many of them can and do perform is remarkable, some doing work quite equal to that of a 15 hands horse. One can keep and use a pony where it would be inconvenient to accommodate a larger horse.

Until recent years the breeding and mating of ponies has been carried on in a very slipshod fashion, consequently the different varieties were fast becoming intermingled.

Almost every variety of pony has now a society—with its stud book—to regulate the selection of suitable sires, and to register stock bred in accordance with the regulations formulated. The reader may ask : “ What constitutes a pony, and what is the difference between this and a cob ? ”

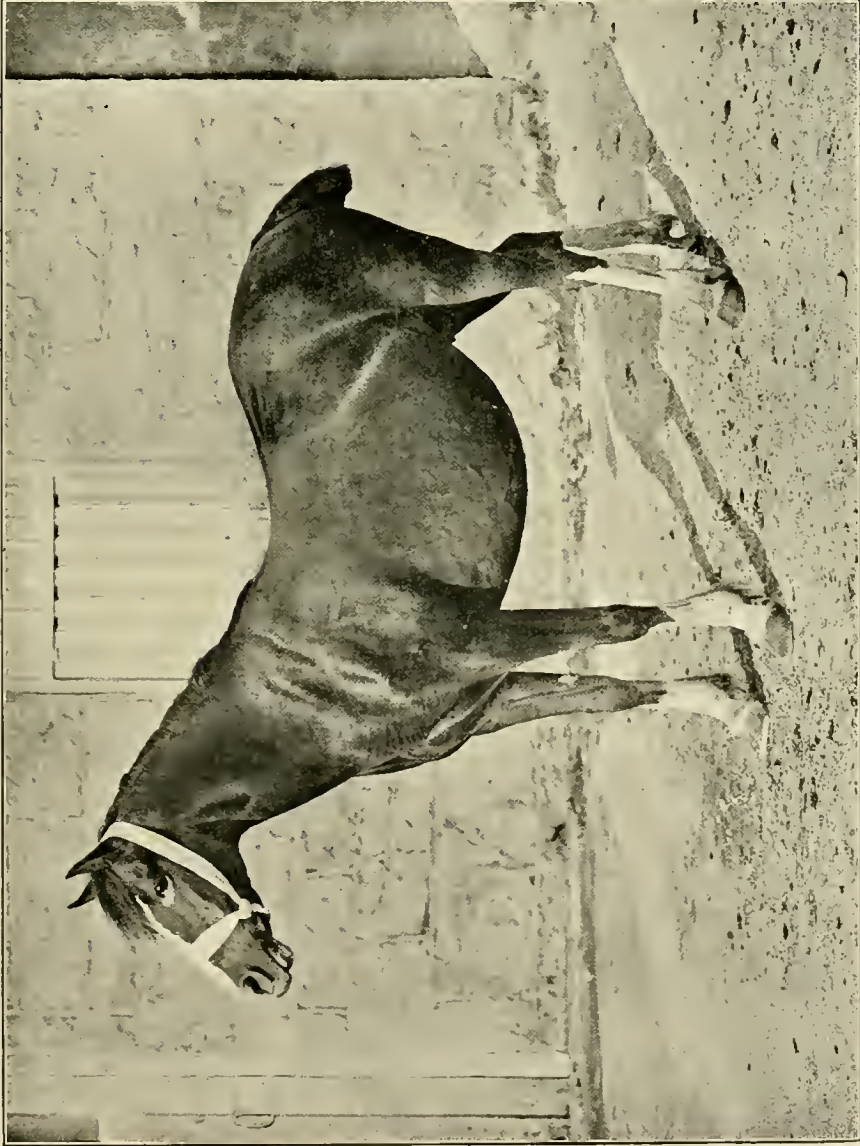
Although it is difficult to lay down any rule as regards type, the differences are not difficult to settle as regards height. Approximately, one may fix 14.2 hands as the *maximum* height

HORSES: THEIR POINTS AND MANAGEMENT

for a pony, with an average of 12.2 hands. The smallest ponies are the Shetlands, and the largest polo ponies. The last named ought really to be included under the term "cob," but the "suffix" pony, being easy of application, has been adopted by universal consent. The different types of hill and moor ponies seldom appear on the show ground, consequently there is a difficulty in knowing what standard of points should be regarded as correct, but the Welsh pony's points are well known to breeders of these ponies, and at some shows there are classes for them, also for Welsh cobs. The same remarks apply to the Shetland, hackney, and polo ponies. As a commercial asset, the polo pony must have premier honours, followed by the hackney, Welsh, and Shetlander.

Breeding ponies should, if carried on in a thoroughly systematic manner, prove a lucrative business, and one that it has long been the author's ambition to take part in, but it is an undertaking that should not be commenced without a reasonable amount of capital. Given this, and sound judgment, success is almost certain. Every variety of pony should conform to certain "*general*" points of conformation, briefly as follows. The head should be light—free from any tendency to cart horse type—finely chiselled in its outline, covered by thin skin and fine hair. Expression on face, *keen* and intelligent; ears, small, thin with hair on them short and fine. Back and loins of medium length, ribs well sprung; the body or middle piece to be *well coupled* fore and aft. Although flat sides are better for hack work, short fore ribs make a pony look "weedy," in front, whilst short, flat back ribs, give it a herring-gutted (the reader must pardon the vulgarism) appearance behind.

PONIES



TYPICAL WELSH BROOD MARE.
The property of MESSRS. JONES, Dinarth Hall, Cologyn Bay.

PONIES

A "*compact*" body expresses one's opinion as to neatness and quality in the region of chest, back, loins, flanks, abdomen, etc. Quality, and carriage of head and neck, are the essentials of beauty in a pony. Many ponies have a bad head and neck carriage, least seen in the typical bred hackney. A good crest adds very materially to the appearance of any horse. Shoulders, arms, and forearms to show well developed muscles.

Knees and hocks sharp in outline, "clean," and to be free from disease. Cannons to consist of thin skin, bone and hard tendons, the latter being felt like cords in outline.

This condition is termed "clean," and every horseman knows full well its meaning. Judges are very particular about quality in this region, and rightly so.

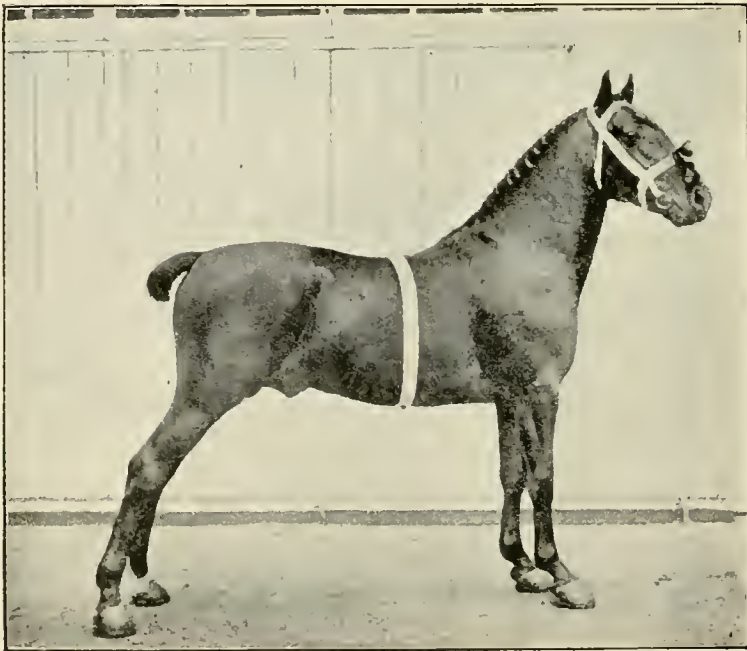
Inferior ponies have thick skin, and a lot of useless loose tissue, or packing between bone and tendons, etc. There should be no "splints" and no evidence of "speedy" cutting! Fetlocks, clean, and free from windgall, etc. Pasterns, broad, but neither too long, nor yet too short. The pasterns should be "fairly" well sloped, but not too oblique. If inclined to be short and upright, this is sufficient to condemn a pony in the eyes of a connoisseur. Feet, sound, hard and proportionate, well placed in relation to the body at rest and during action.

Cobby, well shaped croup and thighs, are necessary to make the general build of the body of beautiful contour. A sweet temper; freedom from vice, soundness, and beauty of action in the shoulders, hocks and knees are essentials for the show pony; in fact, for any typical pony. Briefly considered the following are the most important varieties of ponies:—

HORSES: THEIR POINTS AND MANAGEMENT

THE HACKNEY PONY.

This pony is built upon exactly the same lines as its prototype, the hackney, so that the reader is referred to the description given under the heading of the *Hackney or Roadster*. The Royal Agricultural Society's classification for hackney ponies is as follows :—



HACKNEY PONY ENTIRE.

Stallions, above 12 hands 2 inches, and not exceeding 14 hands.

Stallion not exceeding 12 hands and 2 inches. Mare (with foal at foot) above 12 hands 2 inches, but not exceeding 14 hands. Mare (with foal at foot) not exceeding 12 hands 2 inches.

PONIES

DARTMOOR PONIES.

The height of these ponies ought not to exceed 13 hands, or thereabout. In colour they are mostly black, bay, or brown, though other colours are not uncommon. Being Moorland ponies, they are very hardy, good stayers, and useful for small carts, and as boys' saddle ponies.

THE EXMOOR PONY.

The average height for these ponies is 12 hands, though some are about 13, and in colour they are dark bay, or brown, with black points, but a very characteristic feature is the mealy nose. One of the principal breeders of this variety of pony has been Sir Thomas Ackland, though several others have taken a keen interest in it, and done much towards improving and maintaining it. Arabian blood has been introduced from time to time, and there is no doubt that this valuable alien cross has proved beneficial.

THE WELSH PONY.

This is a very popular variety of pony, having so many qualifications to recommend it. Nearly all Welsh ponies are hardy, good tempered, very sure footed, and good thrivers, even on poor fodder. They have the additional advantages of being small, and if of the right sort, they are very smart and fast.

It is an old variety, and its origin is intimately associated with race horse blood. The Welsh Pony and Cob Society and the Church Stretton Hill Pony Improvement Society, have done a tremendous amount of good for the little Welshman.

HORSES: THEIR POINTS AND MANAGEMENT

The classification adopted by the society first named is as follows :

Class A.—Pure Welsh pony not exceeding 12 hands 2 inches.

Class B.—Ponies from $12\frac{1}{2}$ to $13\frac{1}{2}$ hands when a cob cross has been introduced direct from the Welsh pony.

Class C.—Ponies from $13\frac{1}{2}$ to $14\frac{1}{2}$ hands having more cob blood in them.

Class D.—Welsh cobs from $14\frac{1}{2}$ to $15\frac{1}{2}$ hands, the largest of Welsh bred ponies.

Bay or brown is preferred, but black not objected to ; dun, chestnut, etc., are objectionable colours.

Small ears, prominent eyes—the last named very characteristic of Welsh ponies—large nostrils, and a small head, are essentials for type.

The height for the North Wales division of ponies must not exceed $12\frac{1}{2}$ hands, but for the South Wales division these ponies run up to 13 hands, or thereabouts. Long hind quarters, low placed hocks (free from disease), and strong forearms, together with good shaped knees and clean short cannons, are desirable qualities.

A good Welsh pony should display “pony” character from head to foot. The body is generally very compact, the arm short and powerful, and the feet hard, proportionate, and well placed. Shoulder—hunter action—hock, and knee action are usually very well displayed in the best specimens of Welsh ponies. Their hardy constitution, durability, and low price,

PONIES



WELSH PONY.
The property of MESSRS. JONES AND SONS, Dinarth Hall, Colwyn Bay.

PONIES

brings the breed prominently before those wishing a right good useful sort of pony ; and the author sincerely hopes that the prosperity of this branch of pony breeding industry will continue to flourish.

For the following description, breeding, etc., of Welsh ponies, I am indebted to Mr. John Jones (of Messrs. Jones and Sons), Dinarth Hall, Colwyn Bay, Wales.

First : We have the cart horse—the largest, heaviest, strongest, and the most general type.

In most counties in Wales, the cart horse seems to be divided into two classes. In the lowlands of the several counties, he is bigger, more massive, more bony, more ponderous in his movements, while in the higher and more hilly districts, he is smaller, lighter, nimbler, and often sounder.

On suitable land the heavier horse is, in my opinion, the most reliable, therefore the most profitable horse to breed from. If sound and big enough, his commercial value is considerable. Good four and five-year-old geldings of this class realise from £80 to £90, and occasionally more ; while on most farms, he has earned more than his keep before he is sold. The breeding of horses of this character is best adapted for low-lying, rich, grazing land. Such horses are to be found in those districts of the several adjoining counties that are suitable for their growth and development. As an instance of the success of this industry, I would refer in particular to the rich pastures of a portion of Montgomeryshire. There you will find ordinary farmers breeding horses which, in some instances, have been sold for thousands of pounds as sires ; while mares and fillies have made several hundreds of pounds each. The

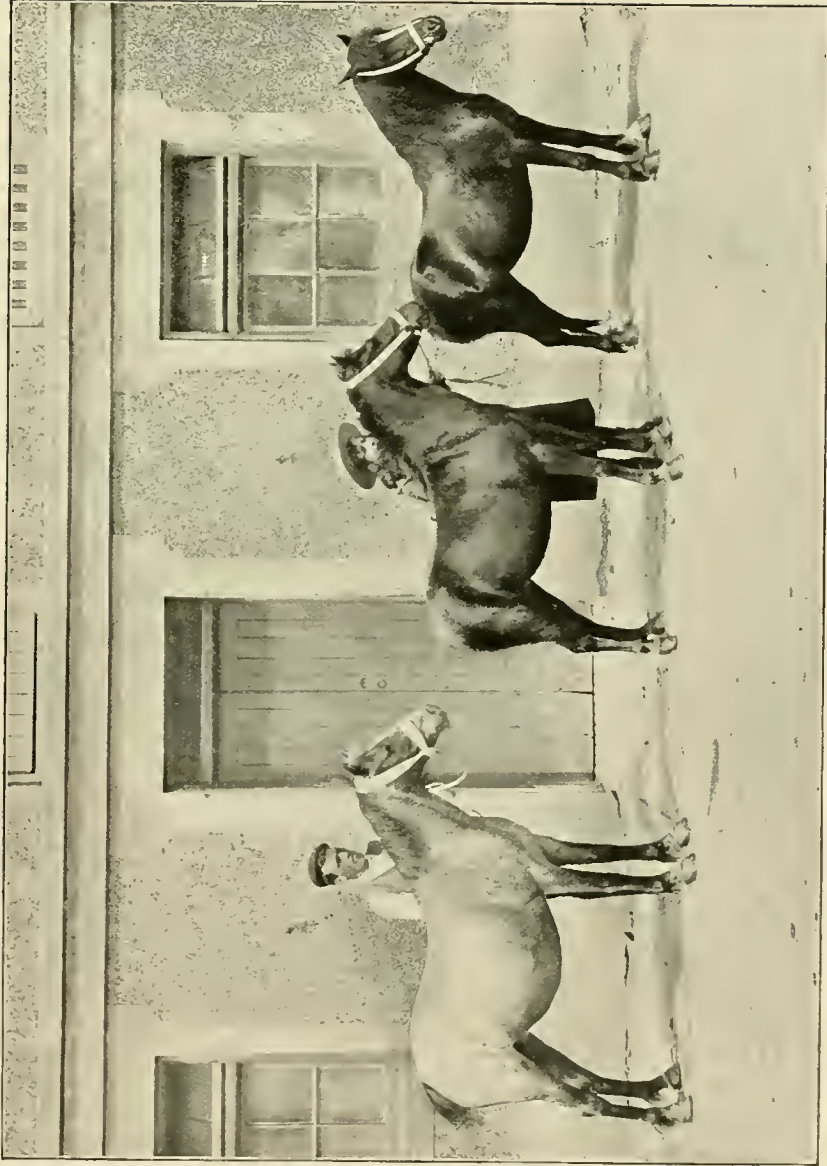
HORSES: THEIR POINTS AND MANAGEMENT

extraordinary position of Montgomeryshire to-day in the cart horse world, in standing almost in the front of all English, Welsh, and Scotch counties, is a lesson to all horse breeders. This leading position is the result of the combination, energy, and judgment of the farmers themselves, and the quality of the soil. For several years, the best entire horses in England have been hired and purchased for services with most profitable results.

The other variety is the smaller horse, lighter in bone, more active, and, probably of greater utility. In some districts he runs the larger horse very closely in size and value, while in the most hilly districts, he is much smaller but sturdier, hardier, and often as nimble as a pony cob. But one singular characteristic runs through all the sections of breeding horses. It is this: The harder bred the horse is, the more courage, stamina, and endurance it has. Favourable conditions, as a general rule, entail the loss of stamina and endurance. The ordinary farmer should, even at a comparatively high figure, secure the best brood mare he can find, and not part with her without exceptional causes. A good sound brood mare goes a long way towards prosperous results. The brood mare is a valuable asset. She should be reasonably worked when in foal; but well treated. If she is fed well and naturally, her progeny will be all the more valuable.

From a foal until he is fit for work and sale, the young horse should be kept in the highest natural condition possible. Many farmers rear their young horses on what they consider the economic principle—low feeding, poor grazing, unnecessary exposure in all weathers, being under the impression that the animal is hardened by this system, constitutionally, and that

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A TRIO OF WELSH PONIES.

The property of MESSES, JONES, Dinarth Hall, Cefn-y-Bay.

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they are economising. Rearing young stock on these lines is, in my opinion, false economy.

The proper mating and selection of the sire is important. Some good sires will not mate well with good mares. The farmer must be guided by his ideal of what he desires to breed as to what horse he selects. I am inclined to think that a travelling sire is a more sure foal getter than a stationary one. The latter, often, is pampered in feeding, a wanting in exercise and nerve power to mate successfully. I hope that every student will help in the district where he may come from to get a combination of farmers to purchase, or to hire one of the most suitable sires obtainable, if private enterprise does not furnish a good one. It is desirable to know the past history of a sire before securing him. Inquiry should be made whether he has been an impressive sire. To ensure this, his back breeding must be good and pure. Has he been a sure foal getter? Is his progeny inclined to softness, and particular softness of constitution brought on by over feeding and want of exercise? Sweating on the least exertion is hereditary from sires, from some of those studs which are kept entirely for breeding—studs where the sires are pampered to such an extent that what stock they get show the taint for two or three generations. The offspring of such animals are generally weaker and smaller than themselves, being difficult and expensive to rear.

I have kept in the background the modern word “shire” so far. The Shire Horse Show Society has done excellent work; and by registering, mating together, and preserving the best, they have well earned the honour of giving what name they like best to the breed they have done so much to improve.

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It is a mistake, I believe, to mate heavy cart horse sires with smaller mares in hilly districts. The climate and the more or less exposed nature of the districts should be considered in all cases. Smaller horses, quite as well bred and quite as strong in the bone, according to their size, as the larger, can easily be found ; but without doubt, it is size that tells in value, provided the foal can be reared and developed naturally in his native surroundings.

Secondly, I would refer to that class of serviceable light cart horse called a vanner, the breeders of which follow no particular line of breeding.

Generally, the breeding is haphazard, a cross often between a half bred small cart mare and a strong cob or *vice versâ*. As far as I am aware, no one has systematically bred this class of animal ; therefore, I will pass it over without further reference.

Third. Light horse breeding.

I will, in this section, confine myself almost entirely to the native product in its various types and conformations. I shall refer to the hackney cross as occasion requires, and I wish it to be understood that by the term "hackney" I mean the modern hackney, the produce of registered breeding on defined lines, during the last thirty years, there being a fusion of thoroughbred blood in many strains, generations ago, with the old English cobs and hackneys before registration. I do not include those pure Welsh cobs, of pure Welsh blood, which were registered in the early days of hackney registration, when entries were admitted from unnamed and unregistered dams.

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I refer to "Welsh Flyer" (857), "Welsh Hero" (838), "Welsh Flying Evans" (856), "True Briton" (840), "Trotting Comet" (834), "Flying Comet" (286), "Eiddwen Flyer" (), and a host of other equally celebrated but unregistered Welsh sires. These horses, although in the stud book, were pure Welsh. We have reliable records how faithfully and correctly the old Welsh breeders kept orally the pedigree of their best sires and dams for generations.

I shall now endeavour to define the different classes.

(1). We have the small ordinary mountain pony.


The limited commercial value of this pony is due to its common appearance and unadaptability for general use except pit purposes and as a draught animal for hucksters. He is thick, broad-shouldered, short in the neck, long in the back, sickle hocked, and having a donkey gait, the result of generations of neglect and breeding from the nonfittest, and, what is worse, often from what cannot be sold. But even in his primitive ugliness, he retains that fire and stamina of the breed. The breeding of this pony has become so unprofitable that many hill farmers have sold out their stock entirely and grazed more sheep instead. And yet representatives of this class are supposed by some people to be the only "pure Welsh," his qualifications being his defects. These, in the opinion of some technical judges, prove the ponies to be the original pure "Taffies"; and when a show is held in a district where such worthless little animals abound, great efforts are made to elect a judge whose qualification often is that he considers that quality will not harmonise with purity in "pure bred Welsh ponies." The size of these little ponies varies from 11 to 12 hands; and they are to be found on the poorest and most exposed hills.

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(2). The next is a larger and better class of pony, grazing on better hills.

These are bred (on the sire side in particular) with more care, the soil, and often the climate, of the hill giving them more bone and substance. But the better breeding does not interfere with their type, neither with their constitution, stamina, and endurance. Their sires are often bred from larger sires than themselves, mated with smaller mares. The size of these ponies varies from 12 to 13 hands.

Thus we see very many ponies whose dams may not have exceeded 12 hands, when mated with a Welsh pony sire of 13.2 to 14 hands, producing a pony sire 12.2 to 12.3. I know scores of such. I would refer you to "Eiddwen Flyer," which was nearly 14 hands high. When mated with small mares, he produced numerous pony sires, from 12.2 to 12.3 hands. This breeding downwards in size is accounted for because "Eiddwen Flyer" himself was pony bred on both sides, his dam being the celebrated "Trotting Nancy" (sire "Cymro Llwyd," a still more celebrated entire pony which may be termed the "Denmark" of Welsh ponies).

I am inclined to dwell more on this particular class than on any other, because I think it includes many of the finest ponies, for their size, that are to be seen in any part of the world. Pony in conformation, in character, in type, in stamina, they possess flesh and courage, high dashing all-round action, and great pace. In some of the best bred, you will find almost a perfect specimen of what I think a Welsh pony should be :  small head, restless, active, intelligent, small ears, wide between the eyes, tapering towards the nostrils, which should

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be wide open and fiery, long neck, short back with quarters well up, long to the hock, long forearm, short cannon bones, with long wavy silken hair attached to the tendons, bidding defiance and exposure to any crossing with the often round-boned dwarf hackney, or with a half thoroughbred, or any mongrel bred pony. Last of all, his eyes should be large, open, and dilated, flashing fiery courage from their orbs.

A good specimen is the most valuable asset in all the pony classes to-day. If you carefully breed him, in my opinion, you cannot breed anything that will pay you better. Seek far and wide for good dams of the type and class ; and if you succeed in getting them bred on the same lines, you will soon reverse the policy of doing away with mountain pony breeding, and you will keep more ponies and fewer sheep on your hills. Well bred Welsh ponies are the scarcest and most sought for in Great Britain to-day. I admit that good specimens are few and far between ; but diligence and judgment will find them. Sometimes, when found, they are condemned as not "pure," because of their quality. Their good points condemn them ; but in England these ponies are bred up. Sixty per cent. of the best show ponies are dwarf hackneys. There is no pony blood in them. Many of them descend from hackneys who became ponies in size by a freak of nature. There are many beautiful ponies of this class in size, but not in type. The cross hackney gives the type. Note their heads and ears ; and, to their credit, their quality, and conformation. Many have adopted this cross as one of the best with Welsh pony mares. I agree that, when a cross is desirable, this is the best. I practise it myself with 50 per cent. of my brood mares, and won the first prize at the London Hackney Show last year with a two-year-old filly bred in that way. I believe that it is possible in

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time, by proper selection, to breed a pure pony in type and conformation from this first cross.

I think the improvement in Welsh pony breeding lies in this direction : (1) By thus mating a typical pure bred Welsh brood mare, 12 to 13 hands, with a pony hackney stallion, not exceeding 14 hands, and possessing for two or three generations a pedigree of ancestors not exceeding 14 hands ; or (2) by selecting and breeding from the best of the pure breed. But as to what will suit your climate and district, and what I think will pay you best, I advise you, without hesitation, to adopt the second suggestion. Improve the pure breed within itself. Your climate suits this breed. You have pony fanciers in more favourable districts than your own in Wales, in England, and in Scotland, to compete with on the lines of the first suggestions. Many of these breeders breed for a hobby, and for no other reasons. Money is no object to them. But with your pure native breed, you stand by yourselves. Your natural system of breeding, ensuring stamina and endurance, helps and protects you. Beyond all this, your best brood mares are the surest and truest foundation to be mated with any cross to improve it, and as such will always command the best commercial value ; and especially suitable is the pure bred Welsh pony brood mare, from 12 to 13 hands, to mate with small pure or half bred, thoroughbred, or Arabs, for polo or riding ponies, their size, stamina, courage, quick-footedness and good shoulders being in their favour.

(3). We now come to the next class, which I shall call the cob class.

The ponies in this section run up to 14 hands. These ponies or cobs are less in number, and are kept mainly on

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enclosed rough land. Or, they are allowed to run about the farm land, the mares often being used for general purposes, and for breeding as well. This class of mares, especially in South Wales, are mated with entires up to 14.2 hands, bred like themselves on pony lines, distinctly Welsh in their type and conformation. They cannot be called Welsh mountain ponies ; but they are pure Welsh in all their characteristics. In North Wales, mares of this class are often mated with pony hackneys, and also with the larger hackneys, with success for riding and driving purposes, but often at the expense of losing the pony character and type in their offspring.

(4). The fourth, or last class, is the Welsh hack, 14.2 to 15, and often higher.

The breeding in this section often varies ; but many breeders, by care and selection, have managed to retain, even in this size, the pony characteristics of the others. I have seen some of the best specimens of brood mares in England amongst this section. Great roomy mares they are, long and low, with great flat bone, covered with the ever welcome silky hair, great long necks, deep through the heart, ribs well sprung, loins and quarters covering immense strength, with constitutions of iron, fit for a sixty mile day's journey, and often afterwards turned out (in the grazing season) with no time to cool themselves. But they are used to it—they are bred to it. These mares are well adapted to breed hunters and high class carriage horses, if mated with large and suitable sires—either half bred, thoroughbred, or pure, if possessing sufficient bone ; also, with the best class of pure bred hackneys.

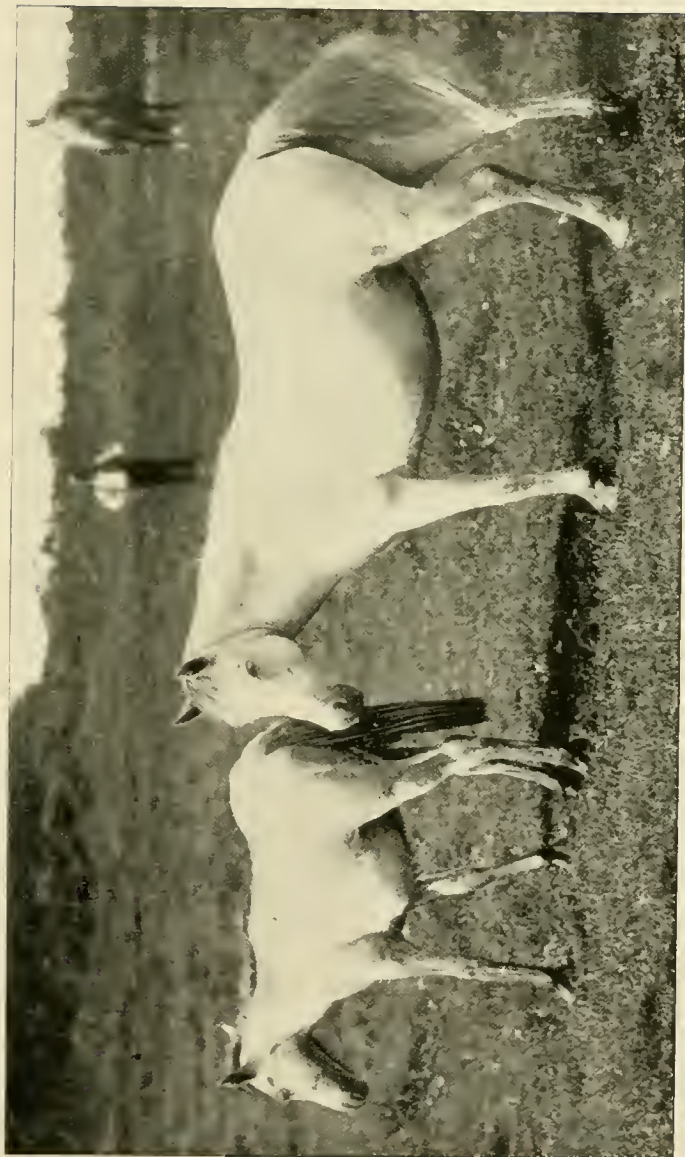
I have thus endeavoured to bring before your minds the different classes of horses which are to be found, and which are

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adapted to your soil and climate. I could refer to several other breeds and crosses of less importance ; but I believe I have mentioned all the most important.

But you will expect me, I presume, to refer to the modern hackney. I reply by stating that no one can admire the best of them more than I do. Excellent results are secured by the introduction of high class hackney sires in the counties of Anglesey, Flint, Glamorgan, Pembroke, and portions of Montgomery, Carmarthen, Denbigh ; and even in some few localities of your own county Cardigan, where the soil and climate suits them. Most valuable animals have been bred from the cross of the useful native brood mare. But even in the districts and counties named, the establishment of a pure bred hackney stud would be a mistake. Such is the ambition to be identified with hackney breeding that England is over-supplied in some districts with hackney studs, kept up by gentlemen who keep them as a hobby. You cannot compete with them ; and even their own efforts have resulted in the congestion of secondary animals, the breeding of which is more a hobby than a practical business. The supply has outgrown the demand, except for the very best. These often realise very high prices ; but the correct commercial value of any breed is the average realised at a sale rather than exceptionally high prices. If you cross one of your best native mares with a high class hackney stallion, you would, in a series of years, average for your selling stock quite up to the general average of at least a secondary quality, pure bred hackney sale. In conclusion, I anticipate that you are ready to ask me : What class of horses do I suggest that you should breed in this almost altogether hilly district ? I advise you and all others who breed in similar districts in Wales :

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NEW FOREST PONIES.
From a Photo sent by the LADIES HORSE

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(1). Breed the best cart horse you can find, suitable to your soil and climate.

(2). Without hesitation, I advise you to breed the best pure bred Welsh pony, which I have attempted to describe in class two, from 12 to 13 hands, and even 13.2. You have the breeding of this class of pony almost entirely in your own hands. Keep this breeding pure.

(3). Breed cobs from 14 to 15 hands with the Welsh cob's character, type and bone. The breeding of this weight carrying cob is also in your hands. Your climate gives him the constitution, the breeding, the bone. His strength and weight carrying power is fully equal to slighter built horses of 15.1 and 15.2. Hardy, inured to all weathers, reared on hard fare and used to it, sure footed and active, able to carry from twelve to fifteen stone with ease, where can the Government procure his equal at the size? I think the possibility of this demand should encourage breeders to believe that there will be more demand for their cast offs and misfits for higher prices.

(4). Mate your typical best and largest brood mares (but only in the limited portion of your districts that suits them in soil and climate) with high class well bred hackneys, and even half bred sires by this cross, if the sire be large enough, and the pedigree and breeding of his hackney sire and his Welsh dam be good.

CONNEMARA PONIES.

These ponies range from 12 to 14 hands, and in colour are usually bay, grey, or yellow dun. The introduction of Oriental blood amongst the ponies of Connemara many years since seems

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to have been the foundation stone for this breed of pony. From time to time the Connemara ponies have been bought to train for polo work and with very satisfactory results. The withers are of medium height ; the body long, and the limbs short and strong, the length of the cannons being about $6\frac{1}{2}$ or 7 inches.

A strong neck, of medium length, withers of medium height, with powerful back and loins, and well sloped quarters are marked characteristics of the breed.

The length of leg—measured from point of elbow to ground—is from 31 to 33 inches.

SHETLAND PONIES.

The Shetland pony is unquestionably of very ancient origin, the breed having existed in the Shetland Isle at an early period, but there is not sufficient reliable data to enable one to fix the period. Brand visited the Shetland Islands in 1700, and this appears to be the first account given of them. Buchanan, in his "History of Scotland," refers to the Orkney and Shetland horses. Shetland ponies are remarkably hardy, and when properly broken make ideal children's ponies.

The long flowing mane, tail, and forelock, together with the diminutive size of these creatures, are unmistakable characteristics of the breed. Those who do not know the Sheltic have indeed a very rudimentary knowledge of the equine race. Inherent qualities of the Shetland are its remarkable powers of endurance upon the scantiest of fare, without apparently suffering much loss of condition.

The smaller a Shetland pony is—other qualities being good—the more valuable it becomes ; in fact, decrease in height is the desideratum of the Shetland pony breeder.

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SHETLAND PONY ENTIRE.
The property of CAPTAIN GORDON MCKENZIE, Breckenhurst, Hants.

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The Royal Agricultural Society's classification for stallions and mares is not exceeding $10\frac{1}{2}$ hands. Eight hands are uncommon, most show ponies of this breed being 9 or 10 hands. Eight hands 2 inches is not uncommon. Of course if a pony is small, it must be proportionately built—general compactness. Colours : bay, brown, black, chestnut, cream, iron-grey, roan, white, etc. A strong back and loins, well sprung ribs, and short “clean” legs, with good shaped feet, are necessary qualities.

Most Shetland ponies are very well built ; in fact, it is the exception, certainly not the rule, to find a badly made Shetlander.

The Shetland Pony Society has, like other horse societies, done an immensity of good for the breed. Large numbers of these ponies are brought into Aberdeen from Shetland, and very fair specimens can be bought in that town for about five or six guineas. There are many Shetland pony breeders in England, and from these the majority of the best specimens are derived.

NOTES ON SHETLAND PONIES.

BY CAPTAIN GORDON MCKENZIE.

The Shetland pony is still becoming not only a very fashionable, but a most useful, one. The breed has much improved, owing to the great interest which ladies are taking in this pretty and topping little horse.

They are fetching greater prices now than ever, consequently it is only the rich who can possess the very best and rare specimens.

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There is no doubt that the Shetland is the purest and also the hardiest of ponies in existence.

It is a great point with the breeders to keep the height down as they are inclined to grow bigger. In fact, I think the new breeders are feeding them too well.

The build of the Shetland is of a miniature Shire. The head should be very delicate with a short neck thickening at the shoulders. He should be short, backed with big arms and quarters, and his legs flat like those of a thoroughbred.

It is not so long ago that we could purchase a Shetland for the small sum of £3 or £4 ; but as the breed becomes more popular every year, so the prices become bigger. The best often fetch from forty to sixty guineas, and always find a good market at home or abroad.

The average height should be between 36 to 40 ins., but there are often smaller ones to be found.

The colour is chiefly bay, brown, and black. It has been known to see a piebald. It would be a great treat to be able to find a white.

[White specimens of this breed have been known.—F. T. B.]

POLO PONIES.

“Polo” has become an exceedingly popular game, and continues to grow in popularity. Unquestionably it is a game that affords the finest exercise that a man can have, and one that enables him to obtain a grip of the art of horsemanship, unobtainable by any other means.

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SHETLAND PONY ENTIRE, "OMAN" (34 INCHES).
The Property of the LADIES HOPE.

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SHETLAND PONY, "PRINCE OF THULE."

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For a description of these ponies and all connected with the game, the reader should apply to the Secretary of the Polo Pony Society.

Long muscular shoulders, and a vertically carried neck, low withers, small ears, broad hock and knee joints, and “ clean ” legs, with good sound feet, are indispensable. A polo pony must have the best of conformation about the shoulders, owing to the bending and twisting movements that he is constantly required to perform. Further, he must be able to get his hocks well under him for quick turning. Polo ponies do differ considerably in their type, but this does not appear to make much difference, provided the animal has been well schooled to the game and his rider is equally at home.

Height, 14.2 hands : India, not above 13.3 hands.

POLO PONY BREEDING.

To Colonel Henriques (Mursley Stud) of Mursley Hall, Winslow, Bucks, I am indebted for the following :—

Various causes—unnecessary here to enumerate—have in the last few years rapidly developed the demand for polo ponies, and raised the breeding of riding ponies to the level of national importance. The polo pony has very properly been made the figure-head of pony breeders, as the embodiment of the highest type of riding pony, requiring every excellence of form, power, quality, and temperament. The pony breeder in this sense is a very recent product, and it is now far too soon to prognosticate on the various theories and systems followed by them. That very valuable work has already been done in their stud farms can be readily conceded, and the Polo Pony Society, called into

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existence in 1895, under the auspices of Mr. John Hill, Sir Humphrey de Trafford, and the Earl of Harrington, has laid the foundation of riding pony breeding on a firm basis. The aims of this society are obtaining more and more recognition and support amongst polo players. It has extended its activity into all parts of the United Kingdom, by encouraging all breeds of riding ponies and by giving to the breeders a valuable means of tracing pedigrees and preserving the purity of the native breeds. The Polo Pony Society must therefore be viewed from a national point of view as one of first importance.

The problem which polo pony breeders have to face is no easy one, even with all the materials at hand in these isles, and it is one which does not lessen when we come to grapple with the task, and gain a little experience. Size within the limits of a couple of inches, speed, handiness, endurance, temperament and weight carrying power have all to be united in one type; in other words we have to endeavour to breed an animal true to type which possesses:

1. The quality and speed of the thoroughbred racehorse.
2. The power and bone of the weight carrying hunter.
3. The activity, stamina, and character of the mountain pony.
4. The handiness of the "haute école" horse.
5. The docility, intelligence, endurance, and size of the typical Arab.

I do not here propose to enumerate, much less to criticise, the various experiments which have been carried on in this

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POLO PONY STALLION, "HURLINGHAM."
The Property of COL. HENRIQUES.

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direction, but to give a sketch of the experiments I have made in my stud, and to indicate the principles which have guided me. I believe that my methods have never before been tried, and although the scheme is only in its initial stage—through causes to be presently explained—there are points of great importance to be noted, some of which will, I think, be of general interest. To present some idea of the difficulties, it must first be observed that practically all the leading playing ponies—such as have made a great reputation in England—are of uncertain breeding, accidental products which cannot be reproduced on the same lines. The horses of this class are never kept entire in this country. The mares cannot be expected, with any degree of certainty, to reproduce their like. Moreover, what stallions are we to put these mares to? The Arab is practically the only stallion who ever comes on to the polo ground. Even if such stallions existed—typical in form and of acknowledged performances—the uncertainty as to their produce would still exist. No doubt the true type would in time be evolved by the slow process of selection. But only future generations would benefit by the losses of the present experimenters. It is, therefore, a matter of great moment to choose breeds of a fixed type, and we are thus practically reduced in our selection to the Arab, the thoroughbred, and the native breeds of ponies.

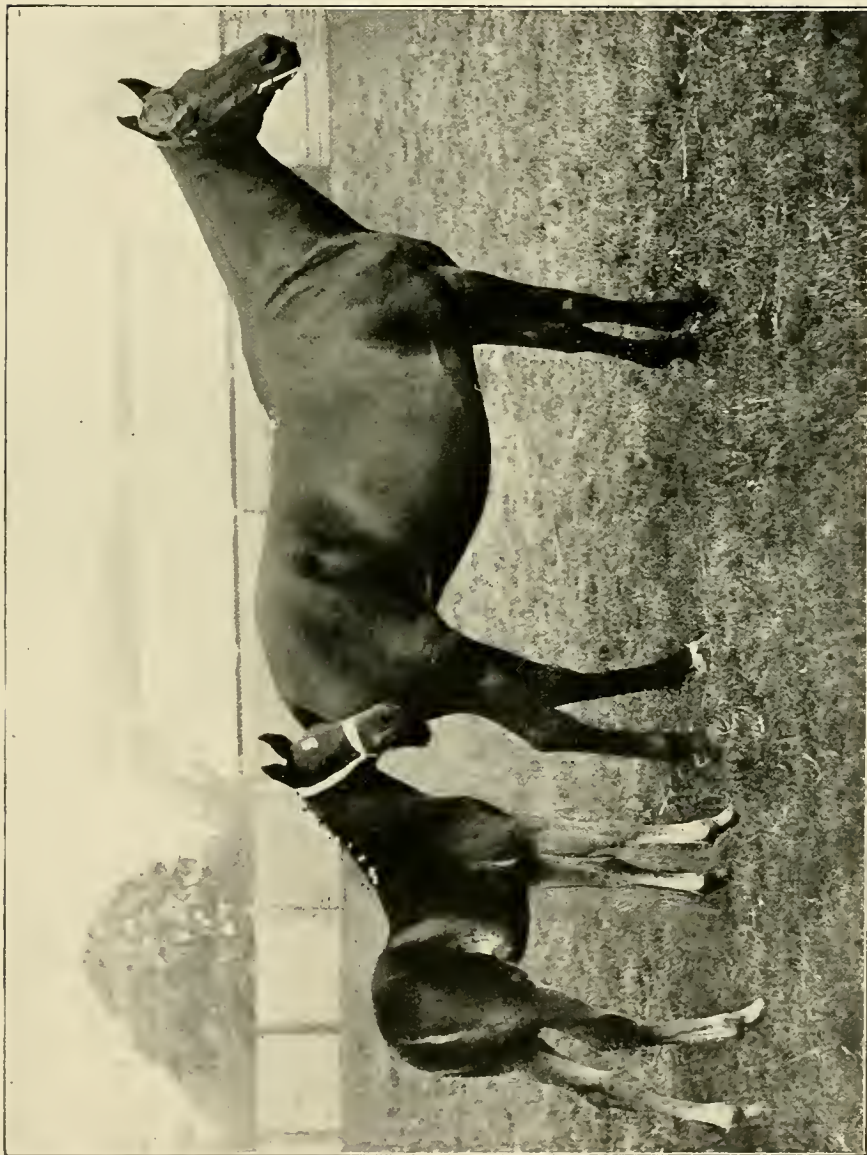
The English thoroughbred—on account of his quality and speed—is held by most breeders to be an essential element in the polo pony, and at the present moment a great variety of experiments are being tried, with the idea of producing a small thoroughbred with pony character. It must here be explained that this most essential “pony character” cannot be defined inwards, and has been the subject of much discussion. Its meaning is best conveyed indirectly. It is not a matter of

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inches at all, but is readily understood by every horseman who uses the term "He rides like a pony" as the highest praise he can give to a big horse—who is quick, compact, and clever, handy and safe, and always has a leg to spare. To infuse this pony character into the thoroughbred horse, he has been mated with pony mares, and the Arab with small mares with more or less thoroughbred strains, and some of the results have been very successful in the show ring. As matured polo ponies we are not now in a position to pronounce on them. I do not think it can be disputed that sex plays a very important part in bringing divergent strains together in all breeding, *i.e.*, that the mare and the sire impress themselves on the offspring in a different manner. I have some grounds for the belief that the size, character, temperament, stamina, and soundness of true bred stock is in a far higher degree dependent on the mare than on the sire. In this conviction, I have in my small stud discarded all mares except the Arab. I have selected my mares rather under the typical height—which is generally recognised to be about 14.1. The Arab is the most potent and truest bred horse in existence, and is, in my opinion, especially qualified to cross with the English thoroughbred, through the dam.

I cannot enter here fully into the erroneous ideas which generally prevail as to the modern Arab. I will now only draw attention to the fact that the Arab has always held the first place amongst pig-stickers in India. An English cross-country line is a mere lawn, with regular obstacles, compared with the country over which the wild boar travels in India, and I think this consideration alone will raise some suspicion that the estimate of the Arab in England may be somewhat at fault. So much for his sure footedness and his ability to travel. Again, the Arab is said to be unable to move and turn on soft, slippery

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POLO PONY MARE, "THE PHEASANT," AND FOAL BY "RUPERT."
Owned by MESSRS. STANDISH, Marvell Manor, Eastleigh, Havts.

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ground. This, in my humble opinion, is only due to his different early surroundings and training. I have conspicuous examples of Arabs and I have myself bred and trained in England. I am inclined to think that the Arab's high intelligence and his independence have been one of the stumbling blocks to his popularity, for his training requires more care, study, and patience than is the case with breeds which have become, through generations of unreasoning servitude and routine, more amenable. Any way, I have followed out my convictions, and mated my Arab mares with the English thoroughbred. I have never hesitated a moment to use the biggest stallions—with the right action, good bone, temper, and constitution. As yet, I have not had a single animal bred on these lines over height. Unfortunately, the continuance of the experiment has been much retarded by the very curious circumstance that during eleven years all the produce of these mares have been fillies ; I have not had a single colt by an English thoroughbred. It will not, therefore, be possible for some years to come for me to continue the cross, and for it to reproduce itself. This circumstance is still more remarkable when it is noted that the same Arab mares have produced two colts by Arab sires during this period. I have heard many theories regarding such phenomena, but found none to fit my case—except the theory that, as a general rule, the most potent parent determines the sex. When I do get a stallion by an English thoroughbred, I believe I shall have made the right nick, he will be a very exceptional animal, and one of the highest value for breeding polo ponies.

I feel constrained to add, lest my purpose be misconstrued, that my theories and principles are merely the expression of personal opinion, and I do not wish to dogmatise in any degree. But I am convinced of one thing—that success in breeding can

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only be gained with strong convictions and by taking up a strong line, with a mind open to accept the evidence of facts. All horse breeding is a slow process, and still slower when the object is to build up a new type. It requires, therefore, more fixity of purpose and design than is in many cases bestowed on it. If I have unduly emphasised the difficulties which beset the pioneer breeder of the riding pony, there is also much of encouragement to put before him. If the highest class of polo ponies are not in every case produced, saleable animals for mounted infantry and utility ponies will be the result, and high prices can be obtained for well bred animals with perfect manners, whatever their size, either as Newmarket or general hacks.

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CHAMPION ARAB STALLION, "MOOT RUB."
The property of COLONEL HENRIQUES.

THE SHIRE AND CART HORSE



TO SHOW TYPICAL CREST, NECK, HEAD AND SHOULDERS OF SHIRE STALLION.

CHAPTER VII

THE SHIRE AND CART HORSE.

HISTORY.

THERE is really nothing authentic as to the precise origin of the shire horse, as in most other breeds, the early history being of an obscure nature.

Mr. Bakewell, of Dishley, unquestionably played a very important part towards improving the cart horse then in existence, and for this purpose he made repeated journeys over to Holland, in order to purchase a stamp of mare that he thought would give good results, after being served with the heavy black horses of the shires.

The results of Mr. Bakewell's experiments proved eminently satisfactory, the produce being horses of a good and useful stamp, and as such were highly appreciated there was a ready market for them. The introduction of a Flemish sire into the North Leicestershire and Derbyshire districts had, likewise, an important influence in determining the present breed of shire horse.

Derbyshire appears to have been the home of the best shires, and to the "Packington" Blind Horse, and Weisman's "Honest Tom"—the latter a bay—most of our shires owe their excellent qualities.

HORSES: THEIR POINTS AND MANAGEMENT

The Shire Horse Society, through the registration of pedigrees and its annual show, etc., has been the medium through which this variety of horse has attained its present *locus standi* amongst patrons of this useful heavy type of animal. For the heaviest class of horse haulage the shire stands unrivalled.

DATE OF BIRTH.—The age of a cart horse dates from the 1st of January, therefore it is advantageous to have mares to foal as early in the season as possible.

POINTS AND DEFECTS.—HEAD.—A well formed head is indicative of good breeding, and judges attach importance to this region. Skin thin and muzzle with a tassel of hair, and not too fine. A Roman nose and a broad forehead are points of beauty in both the shire and cart horse. The hair constituting the forelock ought to be long and free from coarseness. The outline of the jaws should be distinct, and show no indication of puffiness. Eyes, large and full, free from vicious expression. Small or concealed eyes are objectionable.

If purchasing a shire and cart horse the chief faults in this region are: Swollen or indurated glands beneath the jaws or ears; defective sight; disease of the molar teeth; discharge of a chronic nature from the nostrils; scars at the angles of the cheek; a hard puller, and poll evil. These, save one exception, are faults constituting unsoundness. Thickness of the skin over the head and face, coarse head, and a head either too light or too heavy are objectionable points. The same may be said of coarse hair beneath the jaw.

NECK AND SHOULDERS.—Neck must be well arched, wide, deep and rather long. Many cart horses are very poorly developed in this region. A good crest—more especially in the

THE SHIRE AND CART HORSE

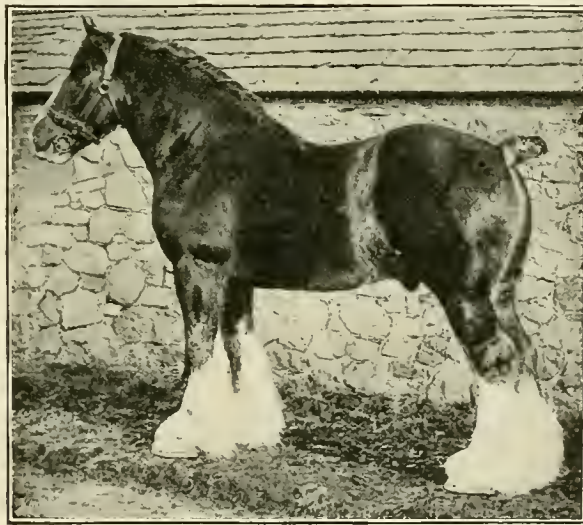


TYPICAL SHIRE STALLION (VIEWED IN PROFILE). A VERY CORRECT TYPE OF HORSE.

THE SHIRE AND CART HORSE

shire stallion, is a *sine qua non*. The hair of mane should be profuse, fine in texture, and long.

When buying a cart horse, throw the hair of the mane over to the opposite side to see that there is no skin disease along the nape of the neck. Thick and broad withers, with deep, sloping shoulders, are essential to both shire and cart horses.



SHIRE ENTIRE.

The property of MESSRS. THOMPSON, Leicester.

Judges are very keen on quality in this region. Badly-formed shoulders predispose the animal to collar galls.

When buying a cart horse examine the *withers* and shoulders very carefully for *soreness*, old or recent, and the withers for *fistula*, past or present. So many horses give a lot of trouble with their shoulders. Patches of white hair are indicative of old sores. Most sellers have very plausible tales to tell over

HORSES: THEIR POINTS AND MANAGEMENT

such injuries. A wasted (so-called slipped) shoulder should at once condemn the animal. Shivering (a disease) is equally objectionable, and constitutes unsoundness. Many shiverers are unable to back.

THE ARMS AND FOREARMS must be big in the bones and have well developed muscles. Any sign of poor development at these parts is very detrimental. Width, depth and *proportionate* length must be present. The forearms should be broadest above, covered by thin skin, becoming squarish at the junction of the knee. The only defects—from a veterinary point of view—likely to be found, may be swelling at the point of the elbow (capped elbow), or another form of swelling above, upon, or below the knee. There are bursal enlargements.

KNEES.—Strong, broad, and square, free from loose or thick skin. There must be no stiffness at the knees. A reasonable amount of knee action is one of the qualifications of the shire. Though the knee may be blemished, the animal's usefulness may not be interfered with in any way. From the backs of the knees, down the cannon, to the fetlock, there ought to be an abundance of feather, fine in texture. As to other points where the hair is long, any tendency towards coarseness of texture is objectionable.

THE CANNONS AND PASTERNS.—Judges of shires and cart horses pay a great deal of attention to these parts, and if the animal does not come up to the standard of excellence here, he or she will not be in the prize list. As there are no muscles—or practically none—below the knees or hocks in the horse, it follows that little beyond skin, bone and tendon should be felt, constituting the so-called “clean” legs. The cannon

THE SHIRE AND CART HORSE

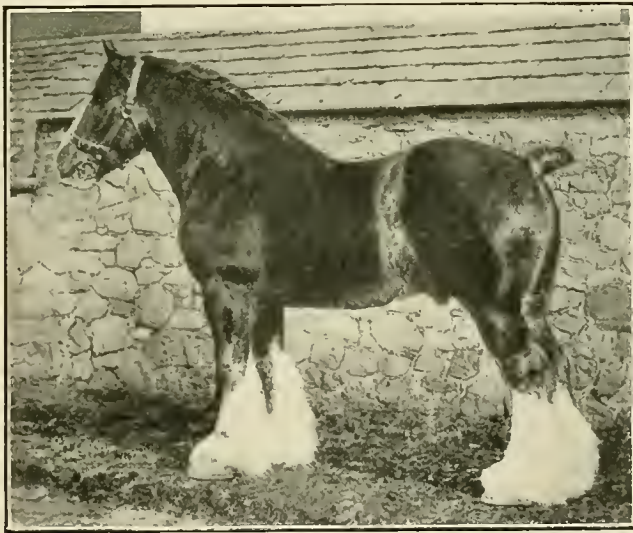


TYPICAL SHIRE ENTIRE, "TATTON FRIAR."
The property of LORD EGERTON OF TATTON.

THE SHIRE AND CART HORSE

bones of the shire ought to be short, broad, and flat from front to back. Thickening of back tendons, splint and swelling around the pastern joints are the chief causes of unsoundness in this region.

Although a cart horse is liable to become lame through the pressure of a formed (or forming) splint, the latter has not the same significance as that upon a horse required for fast



SHIRE STALLION.

The property of MESSRS. THOMPSON, Leicester.

work. The intending buyer, if he finds such present, must exercise his own discretion in purchasing. Strictly speaking, this constitutes unsoundness, but the first named defect, sprung tendons, should condemn the animal outright. Pasterns to be broad and square, of moderate length, and of good slope. Any tendency towards short, upright pasterns is decidedly

HORSES: THEIR POINTS AND MANAGEMENT

objectionable. It is a very common thing to see cart horses with badly formed, ill set pasterns.

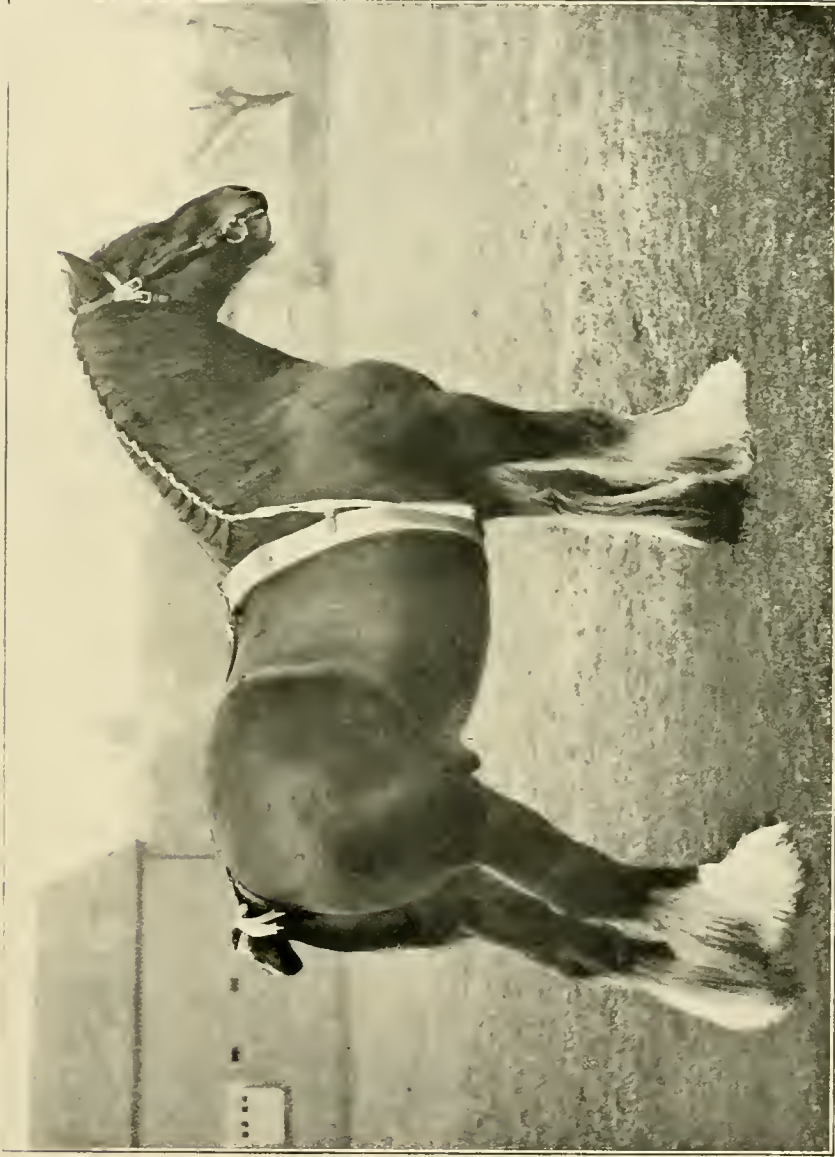
FAULTS.—Bony growths very common in the region of the pasterns and fetlocks (ringbone) interfering with or destroying the animal's utility. One or both joints may be the seat of this diseased condition.

Ringbone is particularly common in the forelimbs, so the buyer must be careful. It is a bad plan to breed from either a sire or dam having ringbone. The same remark is equally applicable to bone spavin.

THE FEET.—It is a matter of common sense that any breed of horse, to do good service, must have well formed, and sound feet. Judges of cart horses will not look at a horse with badly formed, ill-placed, or small feet, and rightly so, as they constitute the foundation stone of utility.

The feet must be of proportionate size, have good sloping walls, and well open at the heels, free from cracks (sanderack), and brittleness, but composed of tough, elastic, horny tubes. The soles concave and the frog elastic and full. At the back and upper part of the coronet (hoof border) there are two elastic plates of cartilage, known as the lateral cartilages, and it is these structures that are commonly diseased in shire and cart horses. This disease is "sidebone," so detrimental to the market value (not always utility) of the animal. The lameness that frequently rises is due to the pressure of these hardened cartilages upon the soft structures in juxtaposition to them. When pressed they will be found to have lost their normal elasticity. Pay particular attention to the feet when buying a horse. Sanderack, false quarter, seedy toe, bruised

THE SHIRE AND CART HORSE



SHIRE 3 YEAR OLD COLT, "LEEK ADVANCE" (A BIG WINNER).
Owned by A. NICHOLSON, Esq., Highfield Hall, Leek.

THE SHIRE AND CART HORSE



SHIRE STALLION, "GIRTON CHARMER," RESERVE, CHAMPION SHIRE SHOW, 1906.
The property of Lord Rothschild.

THE SHIRE AND CART HORSE

coronet, quittor, flat soles, chronic lameness (founder), canker, thrush, and corns, are the chief diseases met with in the feet of heavy horses. Sidebone has already been alluded to.

BACK AND RIBS.—A short strong back, well rounded ribs, and deep girthing are excellencies. Sore back is a fault, often troublesome.

CHEST.—Broad and deep.

LOINS.—Broad and heavily muscled.

FLANKS.—Deep and thick. Many cart and shire horses are too much tucked up at the flanks.

CROUP AND THIGHS.—Croup, full and round. First and second thigh big-boned and heavily clothed with muscle, ending in *clean strong hocks, free from bone-spavin, thoro-pin, or the so-called bog-spavin, i.e.,* a soft swelling at the back. The hinder cannons must be proportionate, clean and well feathered down the back, with the same silky hair falling over the fronts and sides of the coronets as in the fore limbs.

Stringhalt (Scotch cliked) is one of the worst defects of the hind limbs, and destroys the value of the horse.

Shivering can often be found out by backing the animal. Diseases of the feet are the same as the fore limbs. Roaring, likewise broken wind, completely destroys the value of any horse, and on no account should an animal having these defects be bought. Any abnormal sound heard during exertion should condemn the animal.

HORSES: THEIR POINTS AND MANAGEMENT

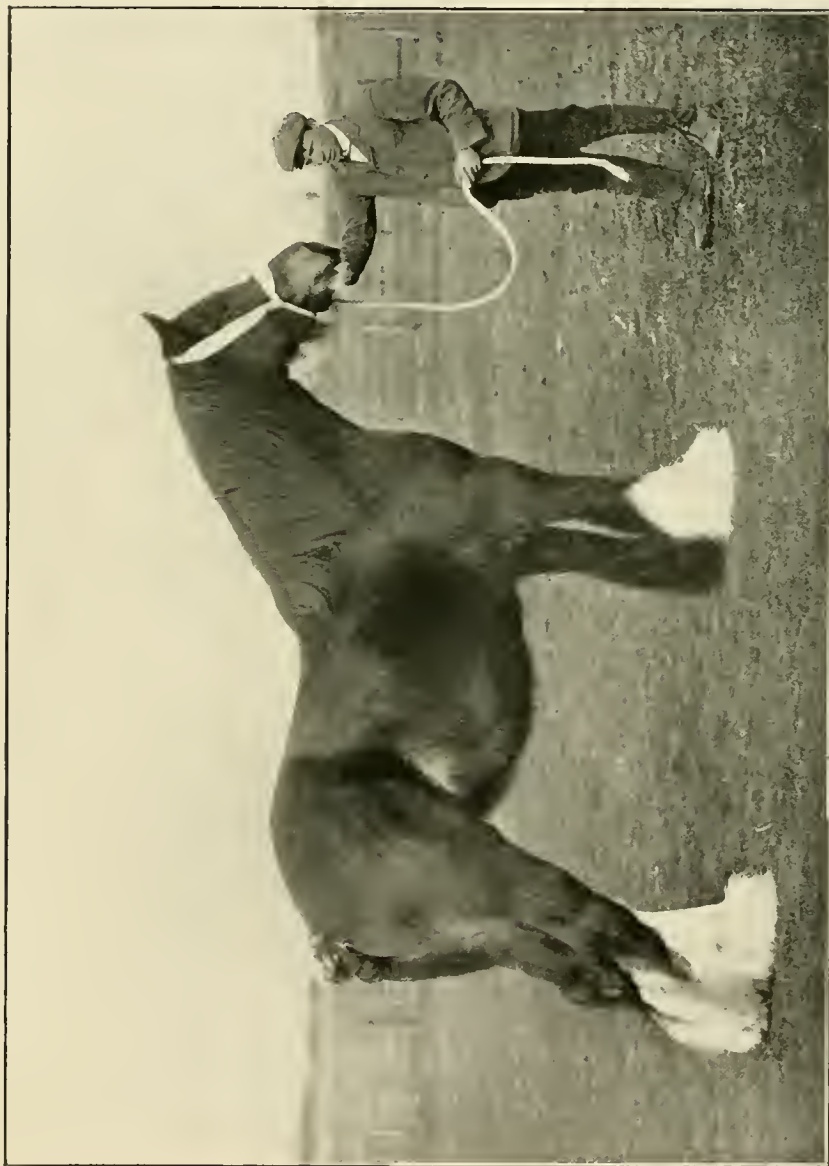
THE AGE OF HORSES.

It is necessary to be able to form an idea as to a horse's age, when purchasing one. Up to two years the whole of the incisor or nipping teeth are temporary or sucking ones. Soon after two years and three months the central pair are replaced by a pair of permanent ones, and by the time that the animal is three years, these teeth are well developed, and easily distinguished from the sucking teeth on either sides of them. The same change takes place in the "lateral" teeth about three years and three months, and at four years these lateral permanent teeth are on a level with the central ones. At four years and a quarter there is a repetition of this process in the "corner" teeth, so that at five years of age the animal has a full set of permanent incisor teeth. It is usual to refer to the lower row when looking at their cutting tables, surfaces for changes undergone by wear.

From five years upwards—though without much reliance after eight years—the tables of the teeth are referred to for the purpose of estimating the age. The crowns of the teeth are covered by a dense substance called enamel, and as this surrounds the exposed portion of the tooth, it is spoken of as the outer enamel ring. There is another smaller one in the centre. This is the inner enamel ring, and circumscribes a central cavity known as the "mark" or "infundibulum." This mark, the *inner* and the *outer enamel rings*, all alter in shape as the animal advances in years.

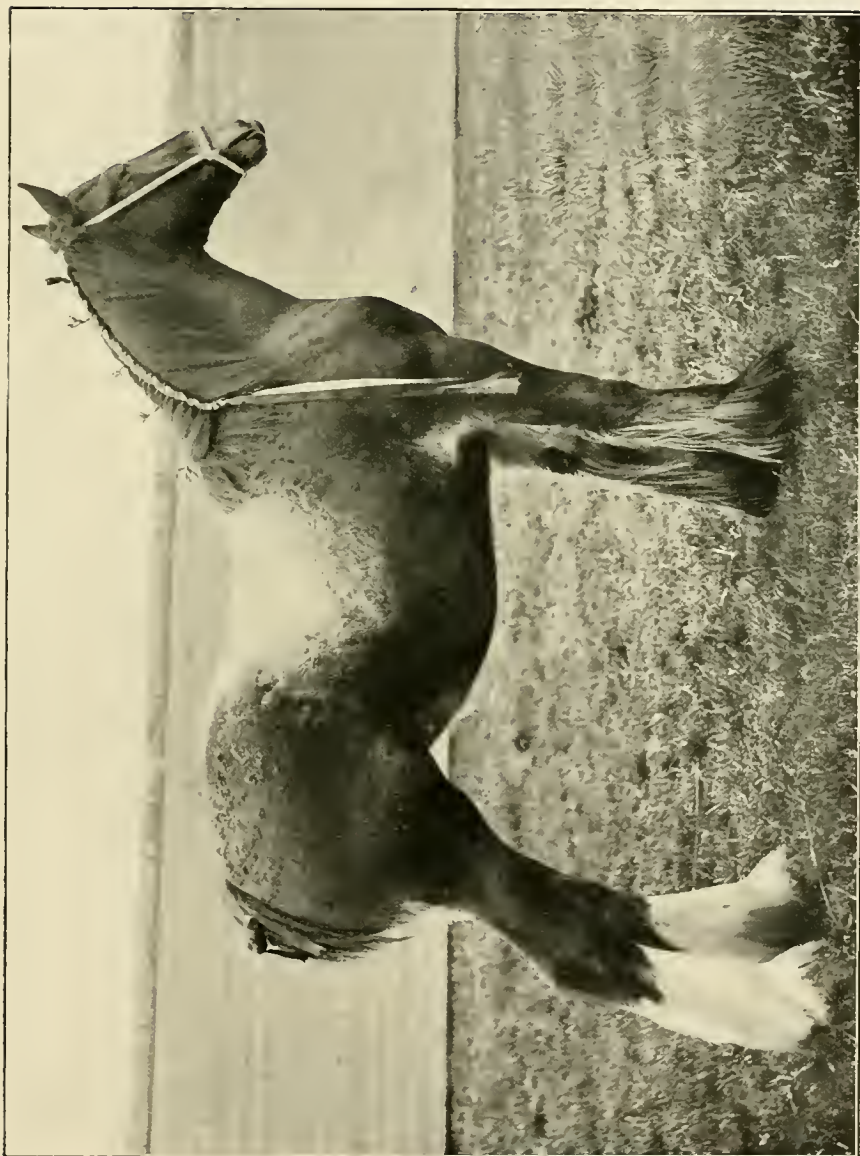
A FIVE YEAR OLD.—It is very easy to tell, the whole of the incisor teeth being on a level, the only signs of wear being limited to the *central* and *lateral* teeth, the mark extending

THE SHIRE AND CART HORSE



SHIRE MARE, "IVY FASHION."
The property of Sir A. Henderson.

THE SHIRE AND CART HORSE



SHIRE FILLY, "TATTON MAY QUEEN,"
The property of LORD EGLINTON OF TATTON.

THE AGE OF THE HORSE

right across the table of the *corner* incisors. If the animal is five years old, most of the wear is confined to the *front* edge.

IN A HORSE AT SIX the back edges of the corner incisors are just coming into wear, being less shelly than at five, though it is not uncommon—certainly the exception—to find the corner incisors remaining shelly for years. The mark in the central teeth is now very shallow, but fairly distinct in the lateral incisors. More confusion is apt to arise regarding a horse at seven and eight years. These are the ages when the buyer is most liable to be taken advantage of.

It is quite common to find a seller offering an unwary person a horse twelve or fourteen years old as one at seven or eight. At seven, the mark in the corner incisor is still distinct, and the teeth much better formed than at six years. The outlines of the central teeth are more triangular than at six, and the mark more of an oval shape. At eight years the marks are very shallow, close to the hinder edges of the teeth, and nothing more than circular or irregular in outline. The tusks (if present) are sharp at their points at six, blunter at seven, still more so at eight. Looking at the lower incisor teeth of an aged horse—it being usual to speak of such after eight years—the mark shows, if at all, that it has practically become obliterated through wear. When a horse reaches about ten years, a groove begins to show itself on its outer face of the upper corner incisor, and it is about half-way down if the animal is fifteen or sixteen years. It is a good plan to look for the presence of this groove, thus one may be prevented from being sold an “old un.” It is, of course, the tables of the lower incisors that one generally refers to for evidence of wear.

THE SUFFOLK



SUFFOLK ENTIRE, "SUDBOURNE LORD" (AT 5 YEARS).
The property of SUDBOURNE STUD.

CHAPTER VIII

THE SUFFOLK.

THIS is a particularly useful breed of horse for heavy haulage, when it is desirable to have the work done at a pace quicker than that of the ordinary cart horse. The Suffolk has always combined the qualifications of the “heavy weight” and the “lighter” weight—an unique combination, and one that should always make the Suffolks a popular variety of horse amongst agriculturists, millers, contractors, brewers, mineral water manufacturers, carriers, and for artillery purposes, etc.

Not only is the Suffolk useful as a “pure” bred animal, but as a “cross,” and the best results may be looked for more especially for breeding vanners. Anyone wanting to breed “van” horses should turn to the Suffolk entire, and mate him with sound mares, either of a light *small* type (for light vanners), or with a *cart* mare for the production of heavy vanners. It is the *low position of the powerful shoulders* that confers remarkable pulling powers upon the Suffolk. Some two hundred years since this breed was distinctive, and noted for the qualities that it possesses in the present day.

To a horse foaled during 1760, the present Suffolk can be traced in the male line, and there is every reason for believing that the Suffolk horses of to-day are quite equal, or even superior, to their ancestors.

HORSES: THEIR POINTS AND MANAGEMENT

In both Norfolk and Suffolk magnificent specimens of the breed can be seen at work, though most of the best studs are found in Suffolk, so that Continental buyers should endeavour to procure stock from proprietors resident in the county.

Ipswich and Woodbridge are very good shows to attend for Suffolks, but the classes at the Royal Agricultural Show are now generally well filled, and the quality the best obtainable.

The Suffolk Horse Society offers a challenge cup, value fifty guineas, for the best stallion, this cup becoming the property of the exhibitor winning it three times.

Fortunately for the Suffolk horse, this Society keenly guards the interests of the breed, in fact, were it not for this "protection" Society, these animals would have so deteriorated that the splendid qualities would almost have become as extinct as the "dodo."

The old term, "Suffolk Punch," was evidently derived from the conformation, freedom from angularity, the appearance of general rotundity being singularly well marked in this variety of horse.

A typical Suffolk should excel not only *fore* and *aft*, but also in its *middle* piece, and in colour be chestnut, with or without white, on the face and legs. Roan objectionable.

THE HEAD should be of medium size, covered by thin skin and fine short hair; the ears small and carried well forwards. The hairs of the mane and forelock to be long, profuse, fine in texture, of a silvery chestnut tint.

THE SUFFOLK



SUFFOLK MARE, "SUDBOURNE ARABELLA" (AT 3 YEARS).

THE SUFFOLK

THE CREST is particularly beautiful in a Suffolk ; therefore if a Suffolk has not beauty in this region it is no use for the show ring.

The build of a Suffolk in the regions of the neck and shoulders always reminds the writer of that seen in the bull. There is no other breed of horse in point of size that can compare muscular development of neck and shoulders with that of a *pure specimen of this breed*.

This statement we make without fear of contradiction. Now and again one may see an old type of pony built upon these lines, and the writer's opinion is that these are diminutive specimens of the Suffolk, in all probability produced by *crossing a pony mare* with a Suffolk entire.

It is the author's wish to see a revival of this almost extinct breed of pony, and the cross suggested appears to be the most likely one to establish its re-introduction.

Width, depth, and thickness of neck are necessary ; the skin thin, and the hairs short and silky. It (the neck) should be of medium length, its great muscularity making it *apparently* short.

SHOULDERS well rounded, long, big in muscle, and of good slope, forming a short powerful arm. Judges are very particular about quality in these regions because it is typical for the Suffolk to excel in these points, indicating great pulling power. There must not only be *width* and *depth* in *front* of the shoulders, but the same condition *behind* them.

THE FOREARMS.—To be of medium length, wider towards the arm, narrower at the knee. The muscles should be particularly well developed here, both at the back, front, and sides.

HORSES: THEIR POINTS AND MANAGEMENT

THE KNEES.—Clean, covered by thin skin ; short, broad, and squarely built.

CANNONS.—Short ; should girth well, eleven inches below knee, but frequently a trifle more or less. Skin, bone and tendons are all that should be felt, or seen and felt about the cannon (metacarpus). Judges will have the Suffolk “clean,” *i.e.*, no useless tissue between skin and bone—in the legs. Width, depth and thickness of the cannon are essential points of beauty.

STRONG FETLOCKS, broad and square pasterns, with a moderate degree of “slope,” and sound, well directed, proportionately sized feet, constitutes a necessary quality in the regions of the pasterns and fetlocks.

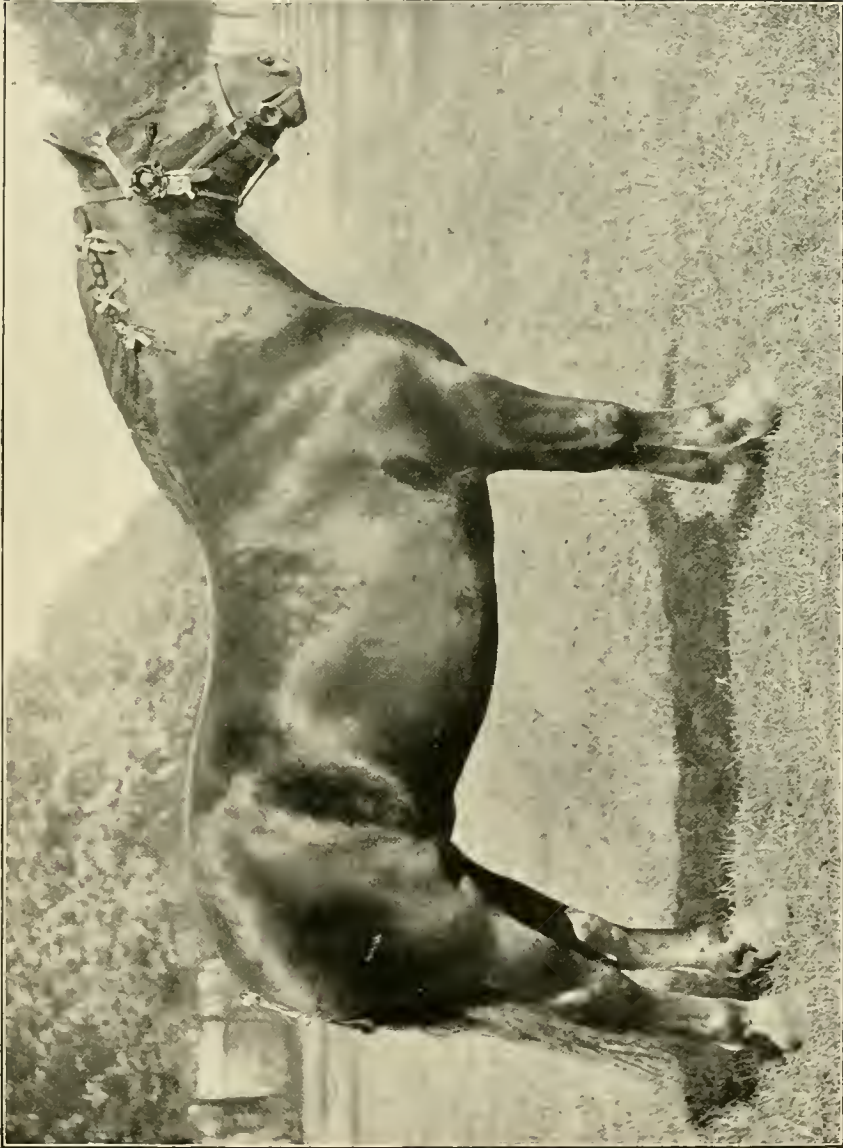
If a Suffolk—in fact, any horse for that matter—has not sound and well developed legs and feet, he is not likely to fetch a good price if offered for sale.

THE HOOF should have an angle of about forty-five degrees ; be hard, well open at heels, and neither shelly nor brittle. When the horse moves, the feet should be advanced in a straight line with the body, turning neither “IN nor OUT.”

Contraction at the heels is a decided fault. The frogs should be well developed, and rest on the ground. Soles, concave ; flat soles being faulty.

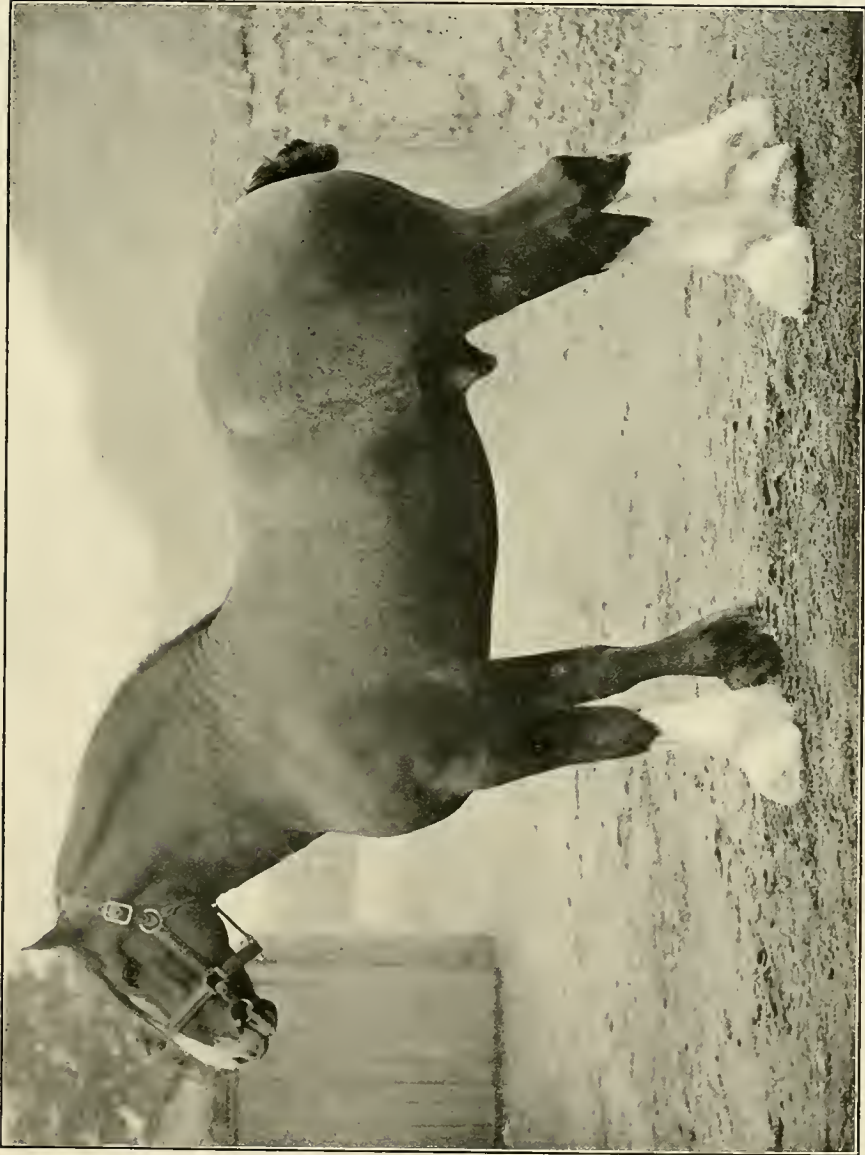
The diseases that concern the Suffolk buyer and breeder, affecting the forelimb, are chiefly as follows :—Splint, ringbone, sidebone, sandcrack, false-quarter, contracted heels, brittle feet, flat feet, and feet inclined to thrush, canker, etc. The worst of these are ringbone, sidebone, and sandcrack, and

THE SUFFOLK



“SUDBOURNE TRINKET” (AS A 3 YEAR OLD).

THE SUFFOLK



CLYDESDALE STALLION. SILVER CUP, 11184.
The property of the SEAHAM HARBOUR STUD, Linton.

THE SUFFOLK

depreciation in the animal's value can only be estimated along with other facts. Now, as to the "middle piece," or body of a Suffolk.

Front and back ribs must be long and well sprung, so as to make the animal comply with the definition—*deep from elbow to flank*. A good Suffolk will girth fully *eight* feet round the chest; *i.e.*, taped immediately behind the elbows. There is a compactness about the body of the Suffolk that is very distinctive of this variety of horse. Croup and thighs must be powerful and well rounded—the last named a characteristic feature of the breed.

From the crest to set on of tail the S shaped curve of outline along back and croup is very evident. The back and loins are short, strong and broad. Though the fore limbs of a Suffolk are placed well under the body, the very opposite applies to the hind ones, these being very far back in relation to the latter. The advantages of the relative positions of the extremities is obvious to any one.

As to the Hocks.—These must be "clean" and strong; free from disease, and when the animal is put to the trot, he must freely bend his hocks. *Good hock action* is a *sine quâ non*, and judges should never overlook action in the hind limbs. A horse may have even brilliant action in front, but very little behind. The former is apt to draw one's attention away from faulty hock action. *Bone spavin* and *curb* stand pre-eminent as diseases of the hocks. The so-called *bog spavin* (puffy hocks) and *blood spavin* are not of much significance, in relation to soundness. Cannons "clean" and strong. The rest as for the fore limbs. Ringbone is frequently met with on the front

HORSES: THEIR POINTS AND MANAGEMENT

pasterns. As regards hair on legs, it must never be coarse, but silky in texture.

The action of a Suffolk demands attention. At the walk, the feet should be lifted quickly, well advanced, and brought lightly to the ground. When trotted, a typical Suffolk shows harmony of action not excelled. Every joint ought to be *flexed and extended to its utmost limit*, producing what horsemen call **AI** action all round.

HEIGHT.—About 16.1 hands.

TEMPERAMENT.—Most Suffolks have good tempers, vice being exceptional, certainly not the rule.

The following are the conditions laid down by the Suffolk Horse Society.

A.—No *stallion* that is known to have a cross of any other breed in the direct male line within *four* generations, and no *mare* within *two* generations, shall be admitted.

B.—No horse otherwise than of a *chestnut* colour shall be admitted, but *white* or *silver* hairs well blended with chestnut shall not be held to be ground of objection, provided the quantity of such does not amount to a decided roan.

C.—No entry shall be rejected on account of white on the face or legs, nor be subject to limit as to height, weight or size.

D.—No entries shall be admitted unless the sire of the dam be eligible for or entered in the Suffolk Stud Book, or that the dam be already entered in any of the volumes of the Stud Book.

THE SUFFOLK



CLYDESDALE STALLION, "MARCELLUS."
The property of T. MARSHALL, ESQ., Stranraer, Wigtownshire.

THE SUFFOLK

E.—When a mare has once been registered any subsequent generation must also be registered to enable her descendants to be eligible.

F.—Animals bred outside Great Britain must be by a registered sire and from a registered dam.

G.—Entries must in all cases contain particulars as to the markings (if any) or clearly state whole coloured-chestnut—chestnut alone not being sufficient. Should the above bye-law not be complied with, the entry will be liable to disqualification.

H.—The foregoing conditions shall apply to stallions, mares, colts and fillies.

Entries to be made on printed forms. Registration fee, £1. If entered as foals, stallions, 10s. 6d., and mares, 5s Yearling entries, £1; mares ditto, 10s., etc.

CHAPTER IX

THE CLYDESDALE HORSE.

ALTHOUGH the demand for Clydesdale horses fluctuates, it is a variety that has long been a great favourite, and large numbers of these horses are constantly being exported from Scotland to the United States, Canada, and the Colonies. Although there is much of the early history of the breed involved in obscurity, a great deal of sound information has been obtained and chronicled by supporters of the breed, especially by the Clydesdale Horse Society. As the name implies, the breed originated in the valley of the Clyde, being the outcome of a selected cross from an imported horse with the mares on the farms in and around Lanark.

Years of careful mating have served to bring the breed to its present high standard of excellence, and there are now better Clydesdales than ever. The enormous amount of good work done by the Clydesdale Horse Society cannot be over-estimated, and the demand for this class of horse steadily increases, and shows every sign of being still greater. So long as Scottish breeders continue to send out good stock abroad there need not be much fear of trade declining. Heavy horses will always be required; no matter how much motor traction may develop, the horse will continue to perform the duties assigned to him from time immemorial, and that comes to him as his birthright.

HORSES: THEIR POINTS AND MANAGEMENT

The favourite colour for a Clydesdale is dappled brown, with a ratch or streak up the face, and Roman nose, these being the hall mark of good breeding. This white patch begins at the nostrils, extending up to about a level with the eyes, ending abruptly. One or more of the lower parts of the limbs are also commonly white, the whole of the long silky hair proceeding from the back part of the cannons being white, that over the coronets white, and the pasterns white.

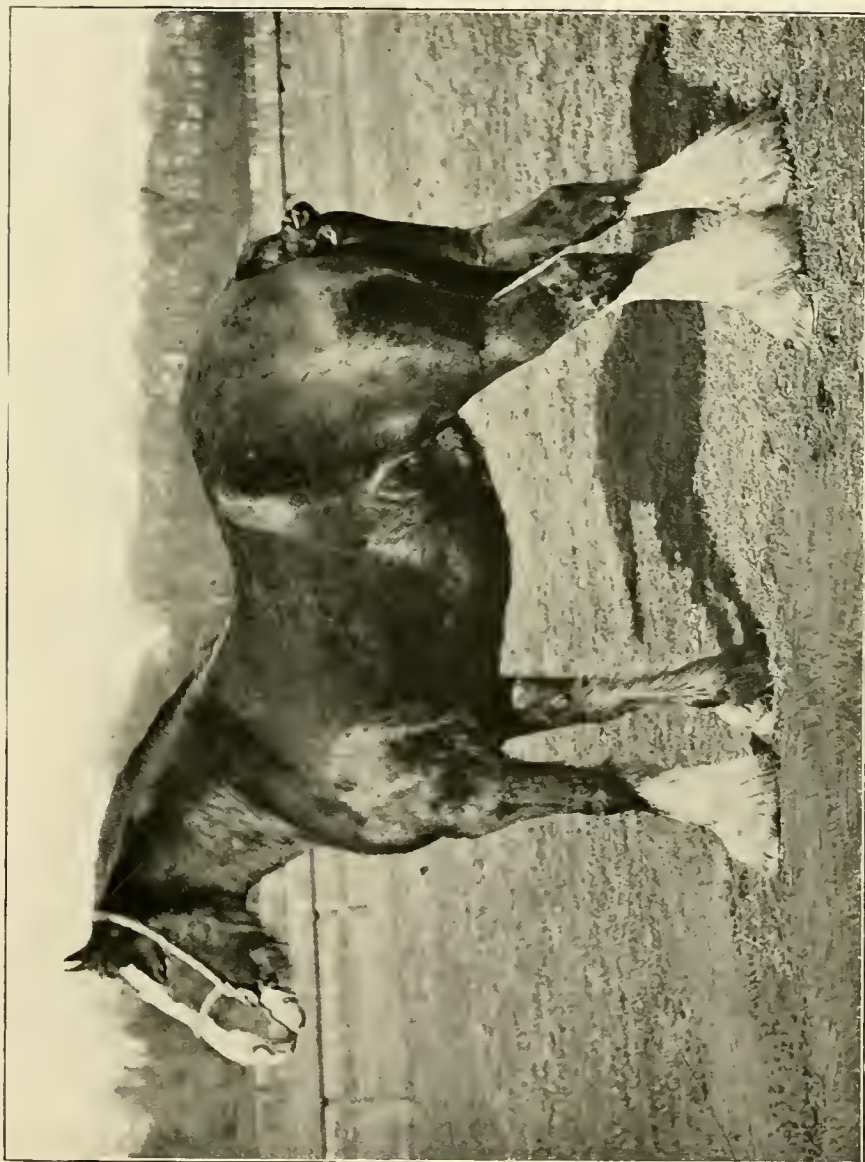
“Marcellus,” one of the most typical Clydes known, has a considerable amount of white hair below the knees and hocks, but this horse is a model of neatness from nose to the soles of his feet.

Many Clydesdales are black, with or without white hair, and this is a very serviceable colour. There are numerous grey Clydes, though this colour is not one that is encouraged. Other colours, such as bay, etc., are common. The *action* of Clydesdales is usually very good. They are quick steppers, and stride long. From 16.2 to 17 hands or a trifle over are the typical heights for a Clydesdale horse.

The *middle piece*, or body of the present Clyde, is unquestionably better than a few years ago, being somewhat heavier, as many of the breed were very defective in this region, and this was one reason why the shire horse occupied premier position. As already stated, there has been a gradual elimination of faults, with a corresponding increase of excellencies. Such are some of the advantages of careful selection in mating.

The *ribs* must be well sprung, and the animal well coupled, fore and aft. The chest ought to be broad and deep; the neck broad and heavily muscled, and crest well developed. If a

THE CLYDESDALE HORSE



CLYDESDALE MARE. "ROYAL RUBY."

THE CLYDESDALE HORSE

Clyde is at all weak in the neck, it is not of good type. The same remark applies to back, loins, and quarters.

All these regions must be indicative of great power, being points in which the Clydesdale excels. Shoulders, arms, and forearms, are regions to which Clydesdale judges pay particular attention. The shoulders must be oblique and heavily muscled; arms rather long but built on very heavy lines.

The Clydesdale is lighter upon his legs than the shire, but it is the rule for Clydesdales to have the best of legs and feet. They are no use for stock purposes without these, and not much more for work. The forearm is longer than in the shire, but it is big in the bone and heavily clothed with muscle, more especially at its junction with the arm.

The *knees*, broad and clean, and cannons clean. All that is required in the region, or at any rate apparently so, is plenty of bone, thin skin, silky hair, and freedom from disease; pasterns and fetlocks, broad, and soundly built.

Feet to be of proportionate size; sound, open at the heels, and well directed. Brittle or shelly feet, flat feet, small feet, or feet affected with sandcrack, false quarter, chronic founder, flat soles, corn, separation of the wall (seedy toe), contracted heels, etc., are objectionable; in fact, any of these constitute unsoundness. The hindquarters of a Clydesdale are very striking, probably because the second thigh is long, but it does not lack in power.

Hocks to be clean and strong, free from bone spavin, puffy swelling, curb, capping, etc. Measured, the hock should be *broad in all proportions* and of good conformation. The *cannons*

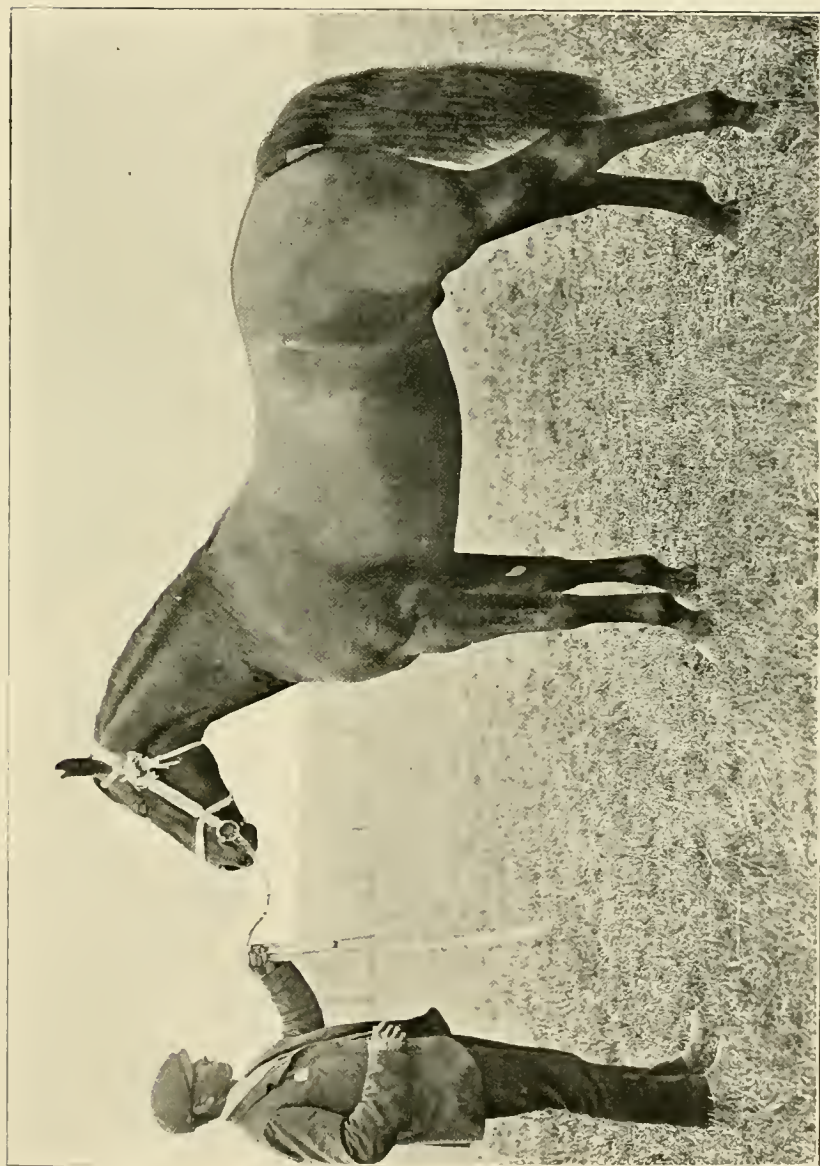
HORSES: THEIR POINTS AND MANAGEMENT

well rounded, with an abundance of soft long hair down backs of them. Judges of Clydes like to see the animal stand very squarely; flex his joints freely at the walk, but when put to the trot he must not only lift his feet up in style, but put them down in the same fashion. *Brilliant hock, knee and shoulder action are a sine quâ non.* Any tendency towards coarseness in either body or limbs, is not looked upon favourably, in fact, judges will not have anything to do with a horse of this class. Either sidebone or ringbone are not uncommonly present

The popularity of the Clydesdale horse in Canada is due to the good qualities and utility of the breed. The Canadians have imported Clydesdales for breeding purposes since 1842, and they have been careful to preserve the purity of the race, so that they have really only this one type of draught horse.

Clydesdales, like every other variety of horse, are liable to suffer from multifarious ailments, either *temporarily* disabling them, or else destroying their marketable value *permanently*.

THE CLYDESDALE HORSE



A TYPICAL CLEVELAND BAY, "RADIUM" (WINNER SECOND PRIZE, ROYAL, 1905).
Owened by Mr. STERNER, Pickering.

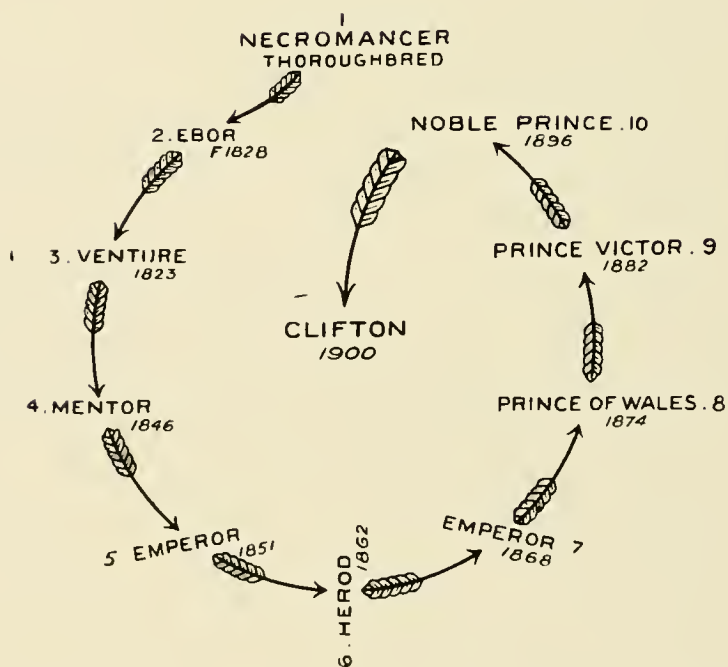
CHAPTER X

THE CLEVELAND BAY.

FOR the following description of the Cleveland bay and Yorkshire coach horses, the author is indebted to Mr. Stericker, Pickering, Yorks.

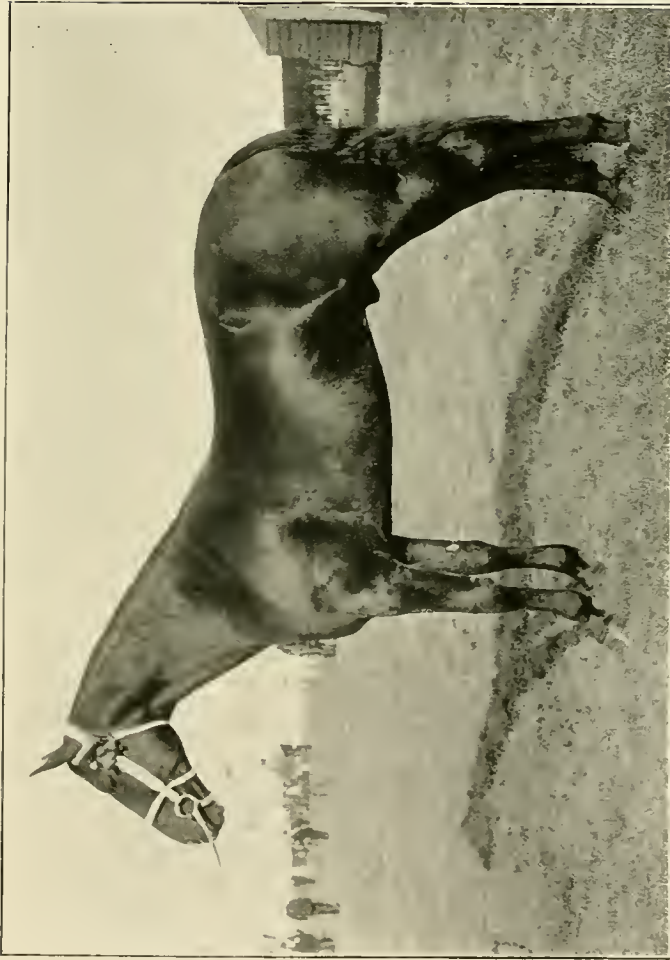
The early history of the Cleveland bay horse is somewhat enveloped in obscurity. It derived its name from Cleveland, in Yorkshire, and in the Cleveland, Whitby and Pickering districts they have been bred for generations. Many families who reside there have still the same breed, which has descended from father to son, and still do the greater part of their farm work, with mares of this class. From an article which appeared in the *Farmers' Magazine* for the year 1823, it seems that in the latter part of the 18th, and the beginning of the 19th century, Cleveland bays existed in fair numbers in Yorkshire and Durham. No doubt the breed was formed by the progressive mixture of the blood of the racehorse, with the original breed of the district, and by continued cultivation formed a breed which reproduced itself with great accuracy both in type and colour, the latter being either light, or dark bay, with black legs, nearly clean of hair, and no white excepting a star, or sometimes a small patch of white on the heel. Cleveland horses are of large size, with plenty of substance and good constitution. Many live to a great age.

HORSES: THEIR POINTS AND MANAGEMENT



CYCLE TO ILLUSTRATE THE DESCENT OF CLEVELAND BAY HORSE, *e.g.*
 "CLIFTON," BEGINNING WITH THE THOROUGHbred "NECROMANCER."

THE CLEVELAND BAY



CLEVELAND BAY ENTIRE, "CLIFTON."
The property of MR. STERNER, Pickering.

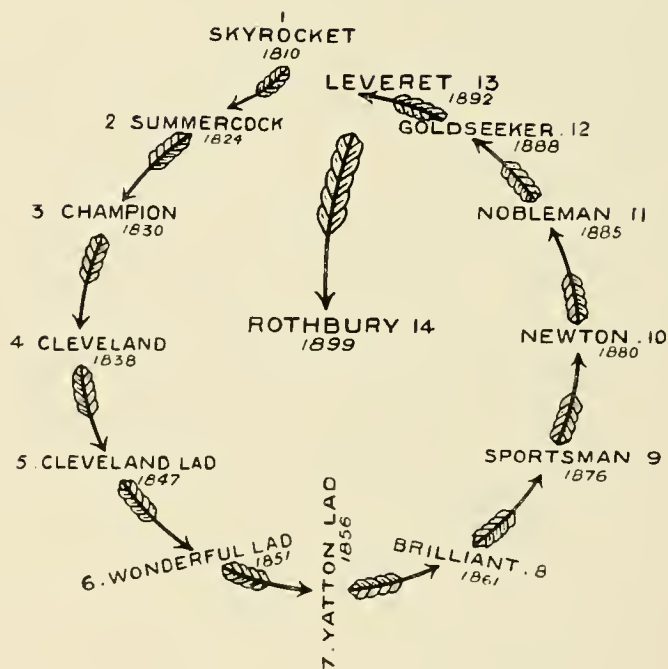
THE CLEVELAND BAY

In an article written by Mr. J. B. Lloyd in the first volume of the *Royal Agricultural Society's Journal*, about the year 1827, he says : " I determined to purchase a Cleveland bay stallion, to cross on Gloucestershire mares, and bought ' Old Cleveland,' " which he describes as standing 16.1½ hands, 10 inches of bone below the knee, 6.10 round the girth. Mr. Lloyd's description of the Cleveland gives you a fair idea of what it should be, but the Cleveland bay of to-day is not built on such strong lines, perhaps owing to inbreeding, or the demand for an animal with more quality. They have not so much substance as the older type, and stand from 16 hands to 16.2 in height, with 9 inches of bone below the knee, and girth 6 ft. 5 ins. or more. Should possess a good head, which is sometimes a little on the strong side, nice lengthy neck, well arched, sloping shoulders, short back, powerful loins, long quarters, with plenty of width in chest. Colour, light or dark bay, with black legs. The general appearance denotes activity and strength combined, in a manner not seen in any other breed. The value of the breed in improving others is too well known and widely acknowledged to need any comment, especially where size and bone is wanted, without losing that *fine top outline*. Some wonderfully good hunters have been bred from mares of this class by a thoroughbred sire.

YORKSHIRE COACH HORSE.

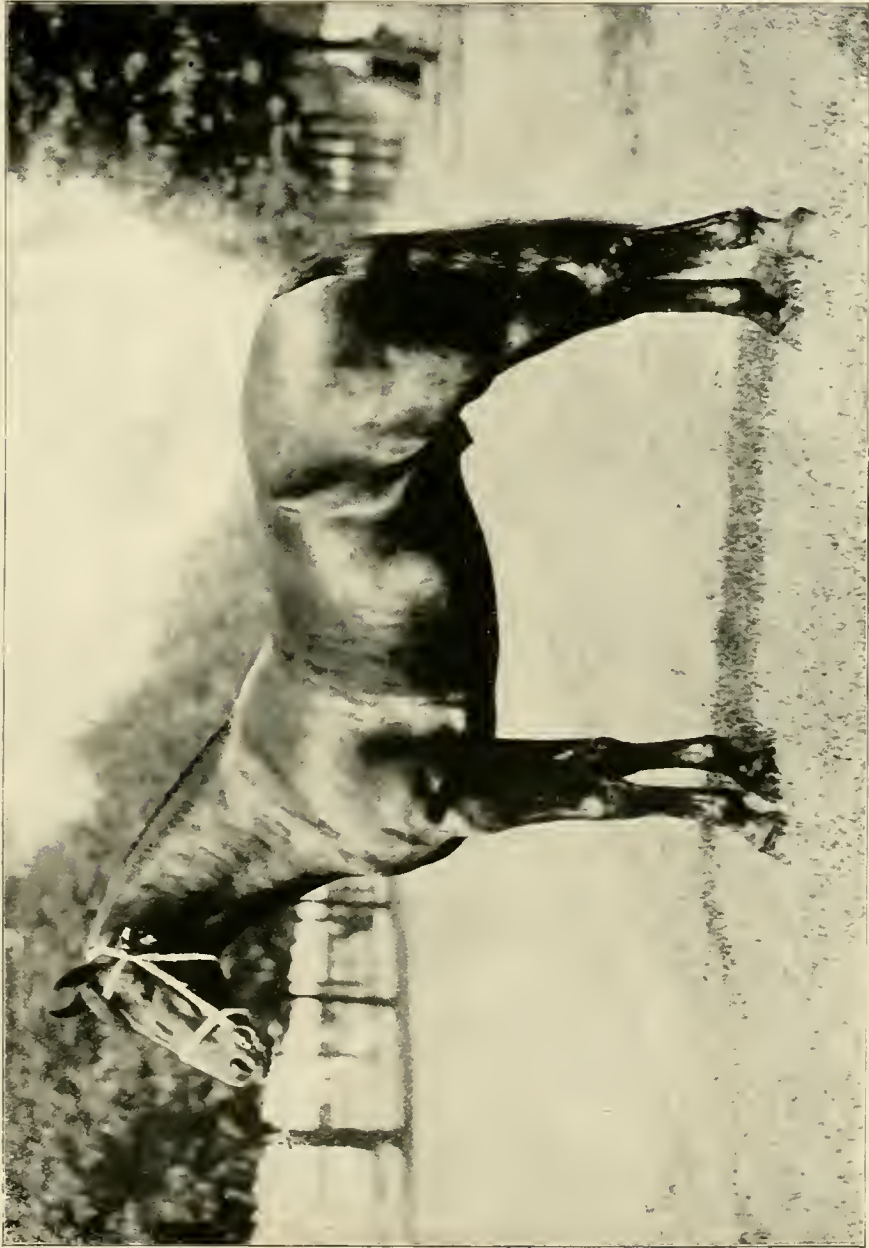
The Yorkshire coach horse might be termed the twin brother of the Cleveland bay, and to anyone not experienced in the breeds, it is very difficult to discern the difference, except that the coach horse is more blood-like and elegant in appearance, and with higher action. In height, 15.3 to 16.3 ; of the latter size they are eagerly sought after for State carriage

HORSES: THEIR POINTS AND MANAGEMENT



CYCLE TO ILLUSTRATE DESCENT OF "ROTHBURY," A CLEVELAND BAY HORSE,
BEGINNING WITH "SKYROCKET" IN THE YEAR 1810.

THE CLEVELAND BAY



CLEVELAND BAY ENTIRE, "ROTHBURY," 1612.

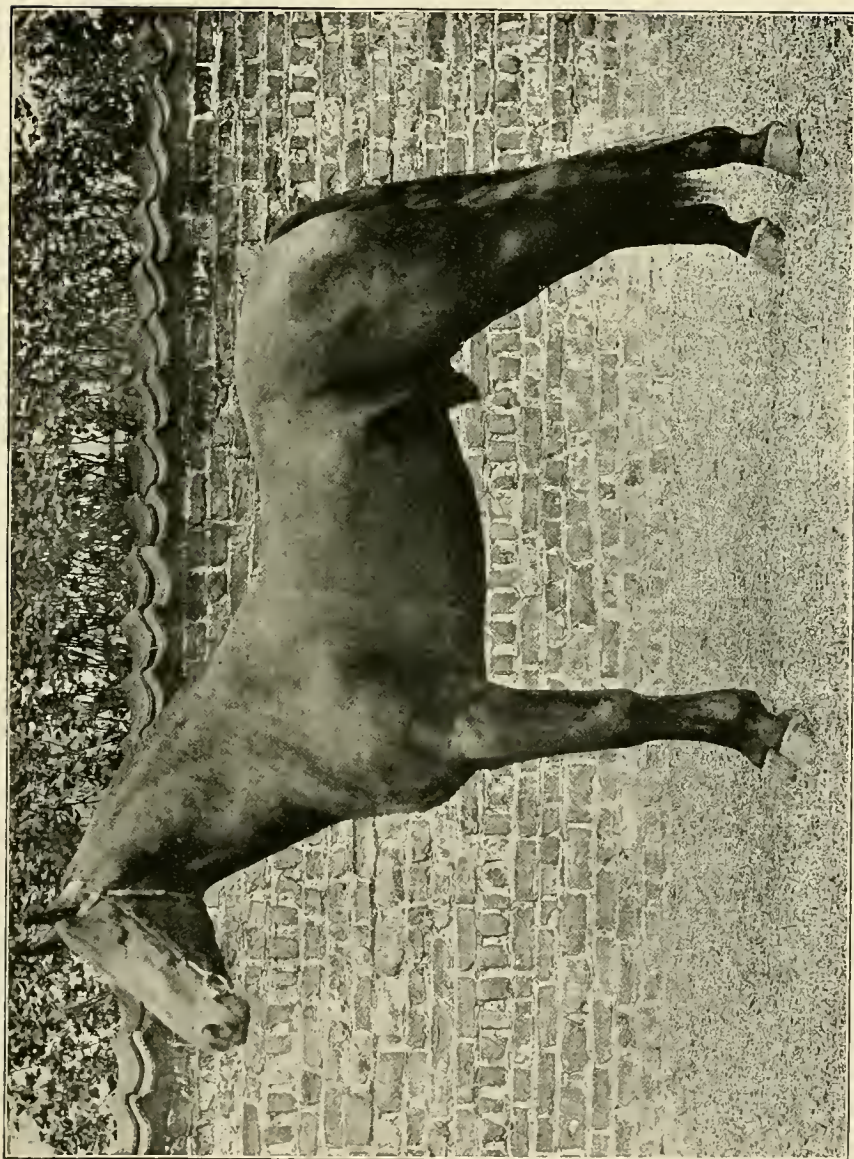
The property of H. STERICKER, Esq.

THE YORKSHIRE COACH HORSE

purposes, and largely used in many of the Royal stables, both here and abroad. The best specimens have no superior for this work.

This variety has been acquired, no doubt, from a Cleveland bay foundation, with more thoroughbred blood infused from time to time. They breed stock with great accuracy, both as to type and colour, the latter being bay, either light or dark, with black legs. Stallions of this breed have been exported in large numbers to different parts of the world, and have generally given great satisfaction in improving stock from native breeds, by giving size, colour, and action, with a better top line. The prices fetched by geldings and mares of this class are very remunerative to the breeder. Some of the largest jobmasters from London, Scotland, and the Midlands have for generations bought a good number of geldings of this class. The demand still seems as keen as ever, and at the Great Yorkshire and other local shows, buyers make annual visits to secure the best specimens. About three-and-a-half years old they bring high prices, more especially for match pairs, and for crossing on short-legged mares with substance, where length of neck and appearance is wanted. Stallions of this breed get very good stock.

THE CLEVELAND BAY



YORKSHIRE COACHING STALLION, "ANEROID," 2419 (3 YEARS OLD).
The property of MR. STENCKES, Pickering, Yorks.

CHAPTER XI

THE THOROUGHBRED OR RACE HORSE.

TO do anything beyond indicating the chief points of the race horse, is beyond the scope of this work ; in fact, it is a variety of horse upon which whole volumes have been written, its history being traced back to the famous Arabian imported by Mr. Darley from Aleppo, and foaled during 1702. This celebrated sire may be looked upon as the foundation stone of the present race of thoroughbreds, likewise of many others of the lighter breeds of horses.

Years and years of careful breeding by selection, have brought the race horses of to-day up to their high standard of excellence, and the early maturity—with a corresponding early decline for work on the turf—of these animals, constitutes one of the most striking features of the breed.

Before entering into the outlines of the race horse, it is advisable to briefly notice the Arabian horse, whose Oriental blood has done so much for the thoroughbred. The Arab is of somewhat small build, usually being about 14.2 or 14.3 hands, and of a sinewy mould. The forehead is short and squarely formed ; the ears small and well apart ; muzzle short, and nostrils large. Chest of medium width, but very deep at girth. An important feature of the Arab is seen in the beautifully arched neck and flowing mane. The shoulders are somewhat

HORSES : THEIR POINTS AND MANAGEMENT

high and heavily muscled ; the front ribs inclined to be flat ; tail set on high up croup. Legs and feet are usually very good, the joints being well knit ; the hoofs hard, and the limbs of good conformation throughout. The barrel is round, and this conformation is favourable to a thriftiness. The muscles of the body and limbs are particularly hard, and the sinews plainly seen in outline below the knees and hocks.

The step of the Arabian horse is very free, but it may be taken as accurate that the Arab horse does not come up to the speed of a good or even fair English racing pony. Its powers of endurance on but poor fodder or food that is insufficient, are remarkable, and few will dispute the Arab's right as a " front ranker " in this respect.

Arab horses form part of the Bedoueen's domestic circle, being reared within and around the tent, and correspond to a canine companion in this country. Some wonderful performances have been placed on record relating to the distances travelled by these horses in a given time.

The Barb of Morocco, the Turkish horse, the Turkoman, the Persian, and the Indian horse, etc., are all of Arabic descent.

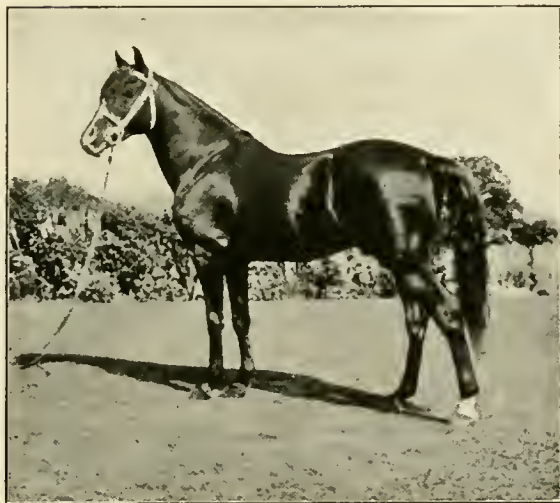
Returning to the English thoroughbred, the height ranges from 15 to 16 hands, or thereabouts, and the colour, bay, chestnut, brown, etc. The skin is exceedingly thin, and the various prominences upon the bony framework are easily recognised beneath it. The most striking feature of the thoroughbred is the slender and sinewy condition of the limbs, together with the lightness of the body and light forehead.

THE THOROUGHBRED OR RACE HORSE

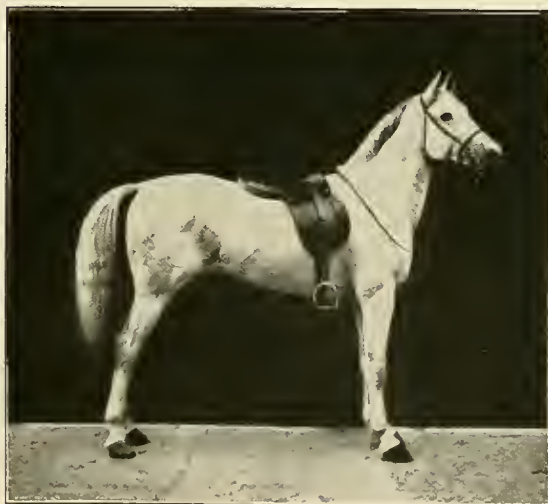


TYPICAL YORKSHIRE COACHING STALLION, "BATHURST," 2309. COLOUR : DARK BAY, BLACK LEGS.
Owned by MR. STERICKEN, Pickering, Yorks.

THE THOROUGHBRED OR RACE HORSE



ARAB ENTIRE.



PURE BRED ARABIANS.

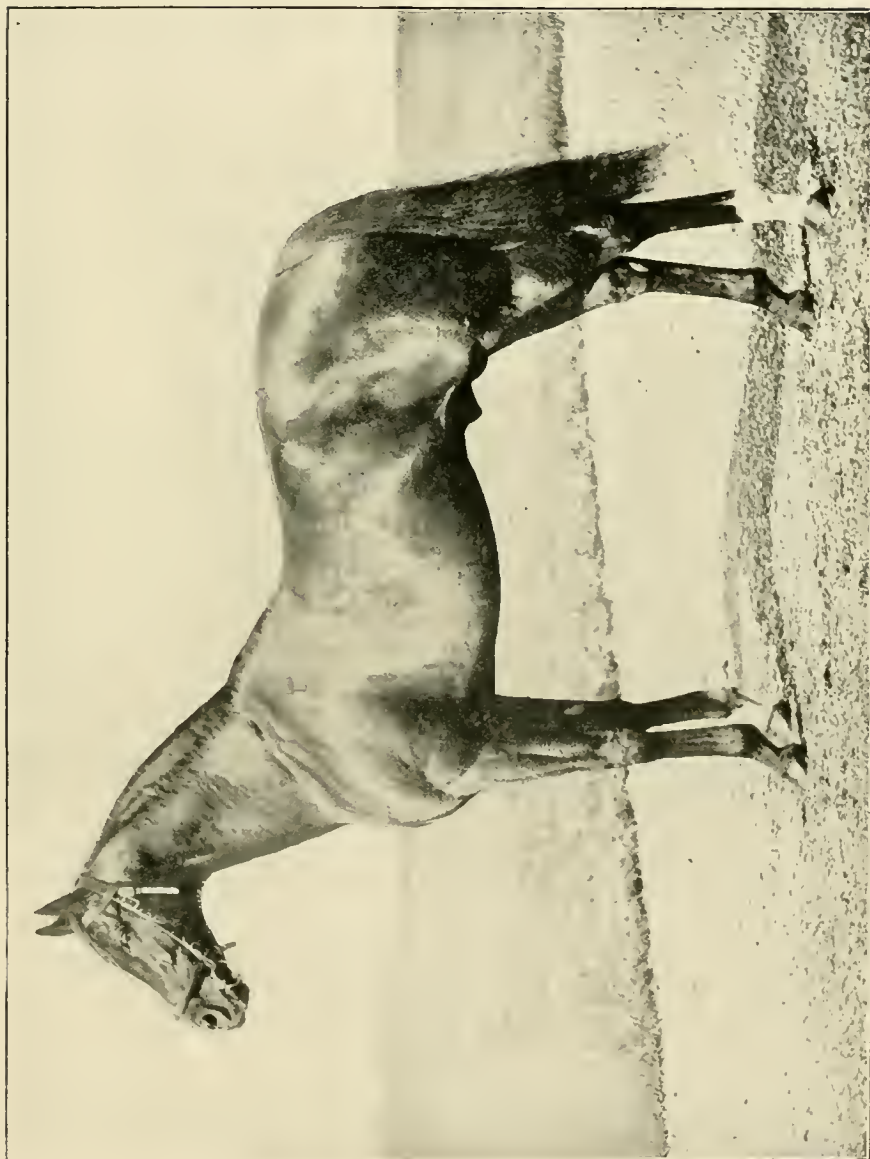
THE THOROUGHBRED OR RACE HORSE

The head must be long, and the forehead straight. Eyes large, and placed well apart. Ears, fine, erect, and covered by fine hair. Forearm and cannons long, but not too fine in the bone ; in fact, strong forearms are a *sine quâ non* to a thoroughbred for staying power.

From knees to fetlocks, and from hocks to fetlocks, the thoroughbred exhibits remarkable elegance, having no equal as regards beauty in these regions. Pasterns, long and fine, with a moderate degree of obliquity. Knee, hock, and fetlock joints must be broad, clean, and free from disease. The first and second thighs are long, more especially the latter ; and it is this lengthy conformation of the second thighs that so materially aids in the forward stride and propulsion of the body. A deep chest (not wide) ; a long neck, sloping down to deep shoulders, together with strong back and loins, and tail set on high up, are additional beauties necessary for a blood horse.

Viewed either from front, back, or side, the thoroughbred appeals to one as a type of horse specially designed for racing purposes only, and once removed from this sphere of occupation, bred in him, so to speak, he becomes a degenerate of his class, and no longer fitted for the work that Nature designed for him.

THE THOROUGHBRED OR RACE HORSE



THOROUGHBRED ENTIRE, "CYLENE."

CHAPTER XII

CROSS-BRED HORSES AND VANNERS.

CROSS-BRED horses constitute a very important section of the equine race in the commercial world ; in fact, most of our horses working in towns especially are the product of what may justly be termed *irregular mating*, though breeding horses in this manner should not be encouraged. There will always be individual interests to consider, consequently inferior and unsound brood mares are used, or it may be, that there has not been a judicious selection of the sire.

This reckless system of breeding horses is certainly dying out, district agricultural societies providing selected sires to travel in the area presided over by such societies, and the results have been highly satisfactory. There are also brood mare societies to further the production of sound stock, suitable mares being bought by the Society and then loaned to the surrounding agriculturists.

Altogether, horse breeding in the present day has advanced by leaps and bounds, being vastly different to that of forty years since.

Almost every breed of horse has its stud book for the registration of pedigree stock, so that what may be termed the *physical development of the horse* is now carried on upon sound and systematic principles.

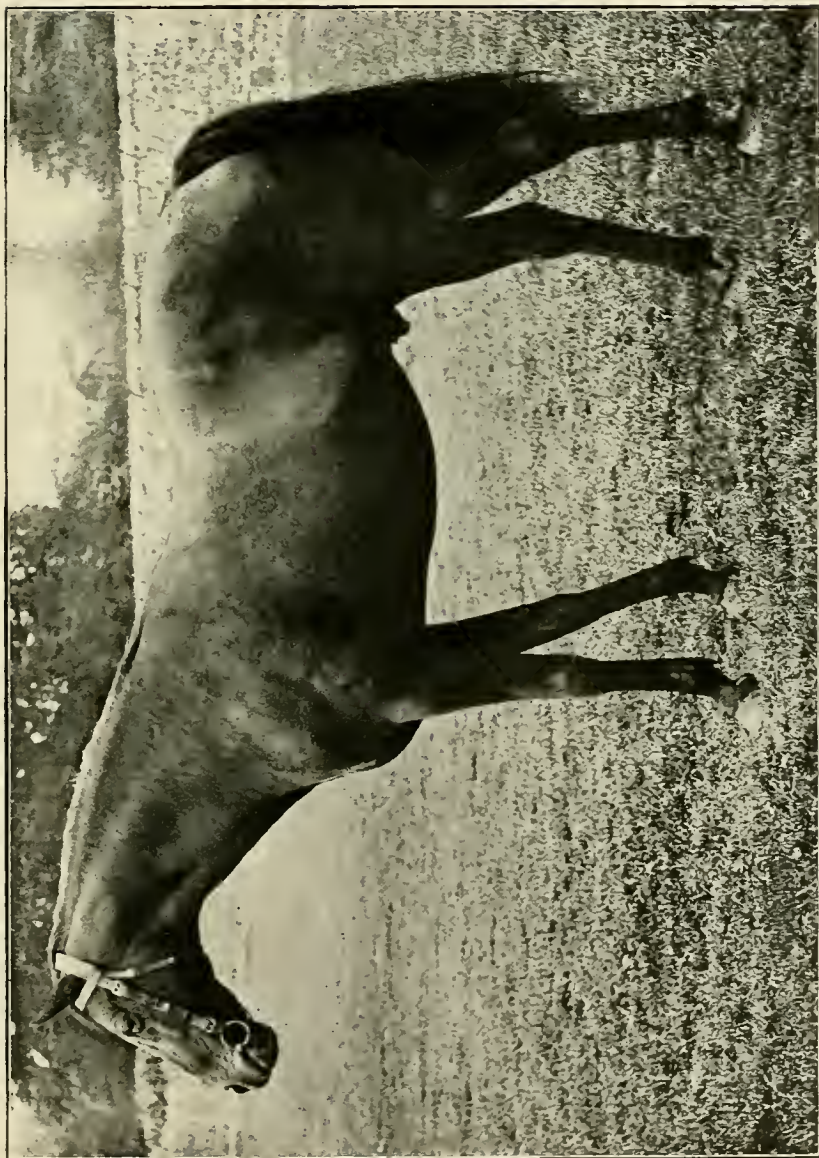
HORSES : THEIR POINTS AND MANAGEMENT

Most cross-bred cart horses are derived from the shire, Clydesdale, or Suffolk, principally the two first named. There is no harm in crossing a *good* shire mare, say, with either a Clydesdale or a Suffolk, or the converse of this. It is breeding from *weedy, unsound* mares and sires that exerts an influence so pernicious. In fact, for *working purposes*, to resort to an occasional "out-cross," proves beneficial rather than otherwise. For *van horses of the heavier type*, the Suffolk makes an excellent cross, the mare being either a shire, Clydesdale, or a cross between these.

A cross that should certainly give a good type of *light vanners* would be that between a hackney sire and a Suffolk mare, selecting a hackney about 15 hands. This cross reversed ought to give equally good results. Stout brougham horses might be had by crossing a good big hackney sire with a Suffolk.

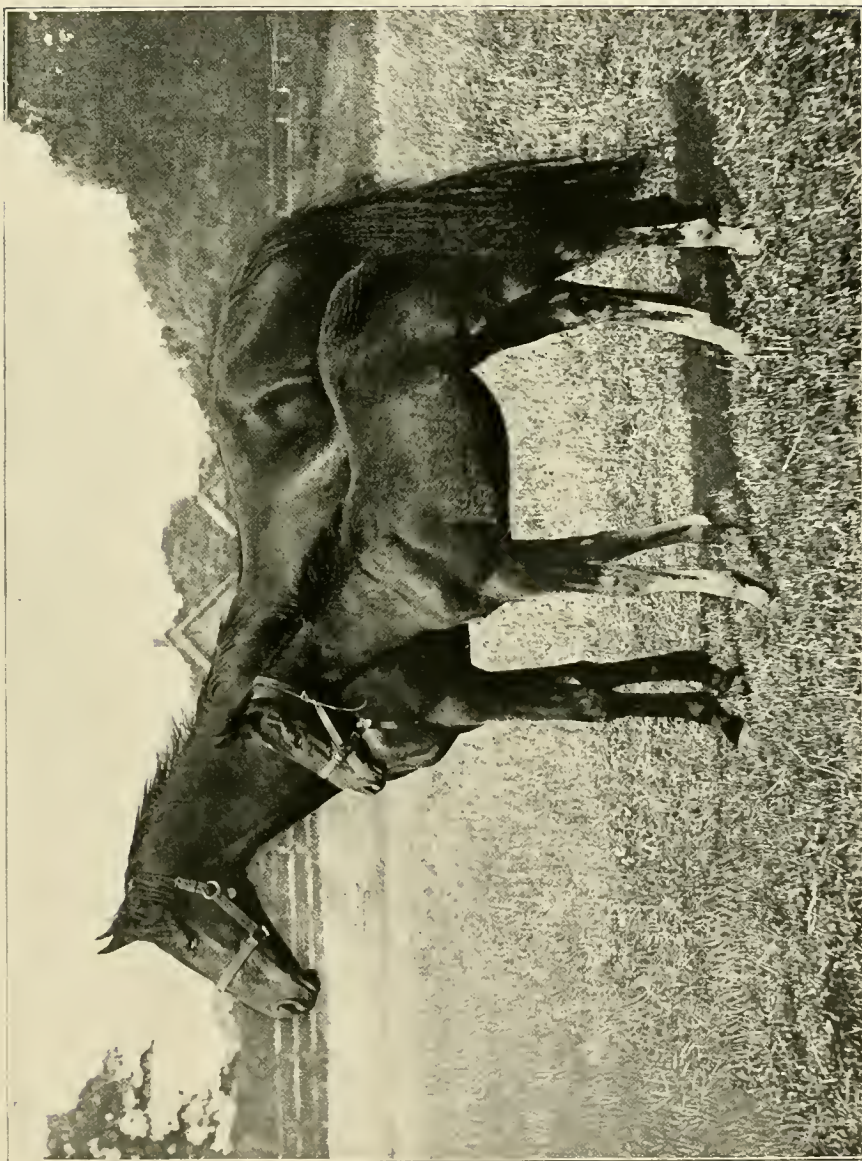
The cross-breeding of light horses should not be encouraged, because the hackney, as a distinct variety, can fulfil all conditions of work. When buying a cart horse or vanner, care should be taken, the opinion and examination by a M.R.C.V.S. being the safest guide, though, of course, such must not be looked upon in a foolish light — that of infallibility, remembering the axiom, that "to err is human ; to forgive, divine." When the intending buyer looks out his own horse he should select one clean in the joints, big in bone, and free from coarseness about the head, hair of the legs, etc. Short stout legs, well sprung ribs, thick, wide, and deep flanks, and broad quarters, are essentials. A good "top" or crest is desirable, so many horses being weedy about the neck. Horses that are narrow in the belly are not as a rule good doers, though they may be good workers.

CROSS-BRED HORSES AND VANNERS



THOROUGHBRED ENTIRE, "ORME."

CROSS-BRED HORSES AND VANNERS



THOROUGHBRED MARE AND FOAL, "LADY DISDAIN."
Owned by the EARL OF CREVE, and sold for 3800 guineas.

CROSS-BRED HORSES AND VANNERS

Take particular notice of the carriage of the head, an inclination to the horizontal being objectionable, predisposing the animal to stumble. I like a horse to carry his head well up, so that it can lift its feet freely from the ground. Action is most important. If a horse has not *good action* it will not do good service. Shoulders, knees and hocks to be freely flexed and extended, and the direction of placing the feet specially noticed. Toes ought to turn neither inwards nor outwards, but be directed in a line with the body.

Peculiarity of action is objectionable. For instance, "paddling." If a cart horse turns its toes inwards, it is very liable to bruise its coronet by treading upon it. The feet, of course, are the animal's foundation stone, so that if these are not of the best, trouble will arise sooner or later.

They must be proportionate, well open at the heels, have a good concave sole, and show a well developed frog and bars. Brittle, flat, and contracted feet are extremely bad, and we should not advise purchase. An indentation in the quarter of the hoof wall, or a crack (sandcrack and false quarter) are equally, or even more, injurious. A seedy or mealy condition of the horn at junction of sole and wall (separation) is not uncommonly present ; if so, it constitutes a defect.

Such diseases as sidebone, canker, thrush, founder, etc., etc., all constitute unsoundness, and rightly so. Probably the commonest cause of lameness in both light and heavy horses is a *bruise* or *corn* upon the sole. It is not comparable to a "corn" on the human subject, being due to a bruise. Although most corns are situated upon the inner quarter of the fore limbs, they are not uncommonly found on the "outer" quarter, more rarely in the hind feet.

HORSES: THEIR POINTS AND MANAGEMENT

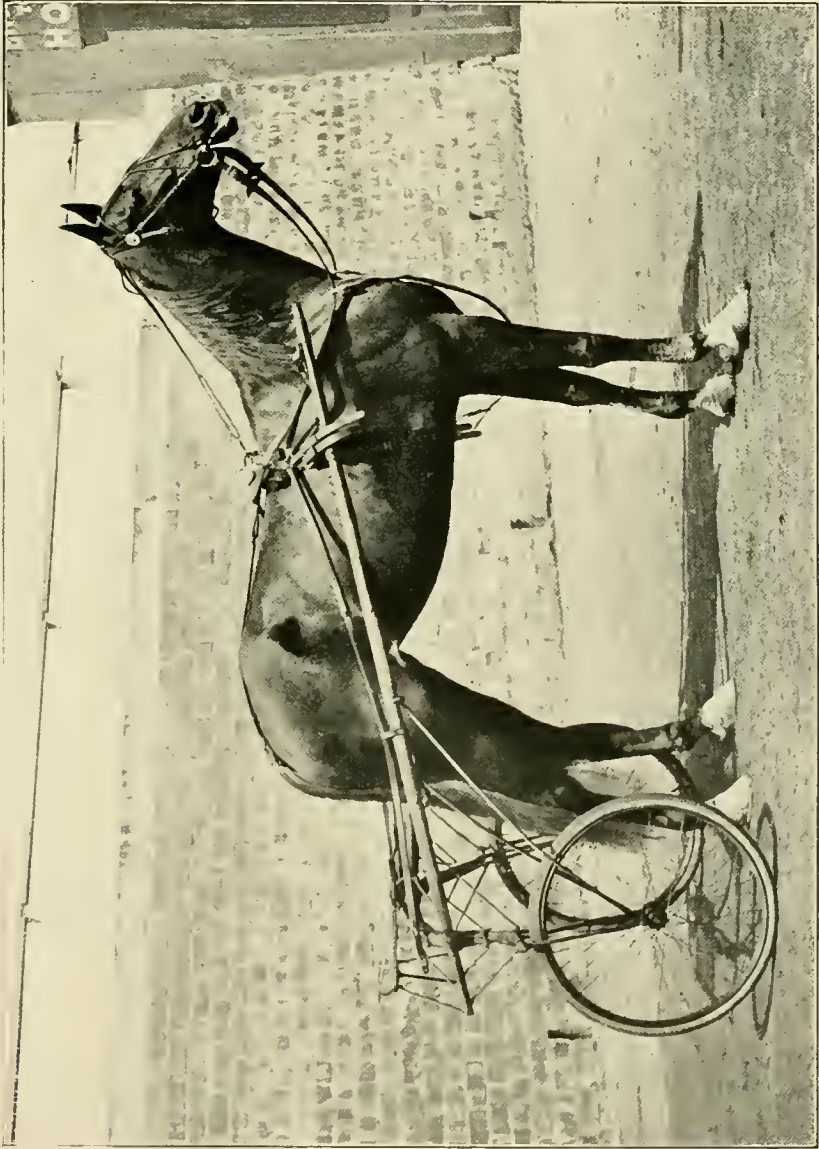
Diseases like stringhalt, shivering, spavin, splint, ring-bone, curb, broken wind, roaring, whistling, vertigo, wind-sucking, weaving, etc., are common defects, and all very objectionable. With reference to colour, bay, grey, chestnut, brown, black, blue-roan, strawberry-roan, etc., are sound serviceable colours.

As to age, six years is the average for utility, but one may buy at any age from four to nine years, or a little under the latter age. For town, six or seven are the best ages.

SECTION D.

MANAGEMENT OF BROOD
MARES.

MANAGEMENT OF BROOD MARES



TROTting MARE, "RUSTIC BEAUTY."

CHAPTER XIII

MANAGEMENT OF BROOD MARES.

MUCH of the success attending breeding operations, or of the failures resulting therefrom, depends upon the manner of looking after the mares, no matter whether they are "in" foal or otherwise. The management of a stud may be classified as *good*, *bad*, and *indifferent*, and those who are fortunate enough to be favoured with the first named should appreciate it accordingly. Bad and indifferent treatment of brood mares is almost certain to be followed by failure, and if the latter does not actually result, the ultimate issue is nothing like so satisfactory as with mares that have received consideration and careful attendance throughout the whole period of gestation.

When mares are served soon after (preferably about ten days afterwards) foaling, particular attention should be given to note the character of the discharge ejected when in use, because if there has been any trouble during the labour, very possibly there will be evidence of some abnormal discharge ; if so, the mare should have the generative passage syringed out with a solution of bicarbonate of soda (two to four ounces to half a gallon of tepid water) and a little, say, forty grains of permanganate of potash dissolved in it.

HORSES: THEIR POINTS AND MANAGEMENT

Service ought not to be given until the discharge has ceased. Many mares prove sterile through this and other reasons, the spermatozoa being unable to live under such conditions as those alluded to, consequently perish as soon as ejected.

Even with mares that are uncertain breeders (from causes unknown) an injection of a solution of bicarbonate of soda, previous to service—say the day before—is advantageous.

Many mares do not become in foal the first season, in some cases, due to excessive sexual excitement at the time of service, and others, through the same cause, do, in the writer's opinion, frequently pick their foals. Although a repetition of œstrum—*i.e.*, a desire for further service—is good evidence that a mare has not “held,” it is not positive evidence, because some mares come into season again and again, yet they are known to be in foal. Immediately after service, the mare should be put to the stable by herself, and there allowed to remain undisturbed for two or three hours. The advantages of this are obvious to any practical man.

If a mare has a foal, this should be allowed to return to her at once, thus avoiding unnecessary excitement.

Working a mare right up to date of foaling is a common, but wise custom, provided that no heavy work is given during the later period of gestation.

It is most prejudicial to compel an in-foal mare after the fifth month—though still worse after the seventh—to perform the same work as one that is barren.

Another matter deserving particular attention is that in connection with the working of mares in milk. A thoughtless horse-

MANAGEMENT OF BROOD MARES

keeper will often take the mare out to work, severing her from the foal for four or five hours at a stretch, and then let her return to the foal in a sweating and exhausted condition. Nothing could possibly be more pernicious. It is a frequent cause of acute diarrhœa, and many foals die from this cause.

If the mare is worked she should be allowed to cool down before returning to foal.

Unless necessary it is preferable not to work mares until the foal is three or four months old, its constitution by this time being altogether of a more vigorous nature, consequently better fitted to resist disorders. About three weeks before foaling time is up, the mare should have a nice, warm, well ventilated loose box allotted to her, if possible, quite apart from the other horses.

The writer has known several valuable mares lost through having been tied up in an ordinary stall and foaling commenced in this manner unexpectedly. However anyone—even those with the most elementary knowledge of horses—could possibly be so foolish and so stupid as to allow this to happen is beyond the author's comprehension.

Such an act as this is most certainly cruelty. The extensive lacerations in the generative passages, owing to this, have been truly appalling, and almost incredible.

Therefore, experience teaches that it is advisable to be in time, and put the mare in a loose box, say, three weeks before her time is up, so that she is, as it were, prepared in the event of foaling taking place.

HORSES: THEIR POINTS AND MANAGEMENT

Moreover, it is a good plan for a mare to become accustomed to her surroundings before labour commences. To allow a mare to foal in the open air is not a commendable procedure—in fact, one deserving of condemnation, certainly not indicative of the conduct of one having the welfare of his stock at heart.

The “premature” delivery of a foal is another matter altogether, accidents of this nature being, as a rule, unforeseen.

If the mare does not foal in the day time, it is a wise plan to sit up with her for a few nights before full time is up, more especially if the teats have “waxed,” and there are signs of milk in her udder, although the latter is not positive evidence that foaling is at hand (though usually so), because milk sometimes appears several months before, and yet the mare goes full time. There may be twins—one dead, and one living.

Dropping of the quarters, *i.e.*, relaxation of the pelvic ligaments and milk in the udder are certainly indicative of approaching labour.

A good deep bed of clean straw having been provided, it is only necessary to keep a watchful eye on the mare at intervals throughout the silent hours. Some mares lie down, others stand up during the act of foaling.

The standing attitude facilitates delivery of the foal—living or dead. The labour pains are at first slight, gradually become longer, stronger and more frequent. Simultaneously with this physiological process, the generative passage is widening out in order to allow the foetus to pass readily along. Expulsion of the “water bag” and its rupture is, under

MANAGEMENT OF BROOD MARES

normal conditions, soon followed by the appearance of the foal. It must be borne in mind that it is the rule for a mare at her first foaling to have a little more trouble over the act than one that has had several foals. Many mares that are wide in the croup experience very little difficulty in labour under normal circumstances.

In every instance the author strongly advises that none but a qualified veterinary surgeon be allowed to interfere in the event of the labour being unduly prolonged, although it is a very general custom for amateurs just to "give the mare a little assistance." This is dangerous.

Times without number the writer has been called to mares in labour, after all amateurish efforts have proved abortive, so far as delivery of the foal has been concerned. *But what about the damage done?*

In many such instances the fate of the mare has been sealed, and probably that of the foal as well.

In large breeding establishments the stud groom is often *obstetrician*, but he has usually a fair knowledge of the elementary principles of parturition. It is the easiest thing in the world to infect the generative passage of a mare at foaling.

Moreover, how can a layman be certain when the mouth of the womb is sufficiently dilated to permit of the exit of the foetus? Special qualifications are necessary, and it is the M.R.C.V.S. that is trained for this purpose.

Unless thoroughly cleaned and disinfected, the fingers, arms, etc., and soiling of the external generative organs, may serve as a source for the introduction of micro-organisms

HORSES: THEIR POINTS AND MANAGEMENT

into the now highly vascular generative passage. Further, the multifarious causes of prolonged and abnormal labour most certainly demands that the work be relegated to the professional man, but this should be *before* and not *after* damage has been done by clumsy hands, communicating disease into the interior.

It is most unjust to any practitioner to ask him to complete a task that has foiled, and been fouled by, an amateur. If it is impossible to obtain the services of a qualified V.S., and labour is complicated, then the hands, arms, etc., ought to be scrubbed with hot water containing some disinfectant, and the mare's external genitals washed in a similar manner.

If the foal is dead, a few quarts of warm water is useful to irrigate the womb with, and a little antiseptic can be added to this with advantage.

The warmth assists relaxation of the muscles and ligaments, likewise serves to lubricate the passage, thus facilitating delivery of the foal.

Rough treatment must be avoided. If any cords are used, these should be well boiled beforehand, so as to sterilise them.

Many difficult presentations occur, such as the "breech"—a very intricate one—more especially if foal is on its back or side. One fore and one hind limb are sometimes put forward on delivery, therefore extreme care must be exercised to ascertain whether this is the case, before fixing cords and attempting delivery.

The head may be presented, but no signs of limbs. Foal must be pushed back and an effort made to reach the fetlocks

MANAGEMENT OF BROOD MARES

so as to bring legs into a straight line for delivery. When the foal is on its back it must be turned by leverage of the hand around the shoulder. Sometimes the head is turned backwards towards the shoulder, if so, an effort must be made to place it in a straight line, by cording the lower jaw or use of the hook, but the layman ought not to use instruments, especially hooks, as it is very easy to create a fatal injury through the use of these appliances.

A cause of difficult—very difficult—labour is that due to the accumulation of gas beneath the skin of the foetus, due to after death changes. Dropsy, abnormalities, and many conditions of foal or mare, are causes of protracted labour. As soon as the foal is born—unless the cord has ruptured itself, it is advisable to tie it off three or four inches from the navel. One can hardly be *too* particular regarding cleanliness over this action, and many foals die through neglect in this matter. Boil the tape or string and have very clean hands : dust on a little boracic powder, or some other antiseptic.

If foal is unable to stand it ought to be allowed to remain on ground, so as to gain strength. There is no particular hurry for it to suck. A little education is often necessary in this respect, as many of these little creatures are very innocent of their surroundings, and the good stuff that Nature has provided as their aliment.

In the event of the mare dying, or having a poor milk supply, the foal must be reared by artificial means, though it often happens—not always—that the foal does not recompense one for the care and expense.

SECTION E.

SIGNS OF DISEASE.

THERAPEUTICS.

SPECIFIC AND CATARRHAL
COMPLAINTS.

DIGESTIVE DISORDERS.

DISEASE OF BONES, JOINTS,
ETC.

WOUNDS AND THEIR TREAT-
MENT.

DISEASES AFFECTING FEET.

SOME DISEASES OCCURRING
ABROAD.

SKIN DISEASES, ETC.

DISEASES AND INJURIES OF
THE EYE.

CHAPTER XIV

(A) SIGNS OF DISEASE ; (B) THERAPEUTICS.

THE BREATHING AND PULSE.

WHEN the horse is at rest, and kept in a cool stable, the respirations average twelve to fourteen per minute.

In lung apoplexy, especially, this number is greatly increased. Exercise, excitement, etc., all increase the respiratory movements.

In some diseases the breathing is slowed, whilst the inspiratory (intake of air) and expiratory (output) acts are performed unequally, or irregularly. Noteworthy examples of the latter are seen in broken wind and pleurisy.

The most convenient situation to take the pulse of the horse is at the artery winding around about the middle of the lower jaw. The fingers, second and third, ought to be made to compress the artery very gently, and of course it is essential that the animal be perfectly quiet meanwhile. It is not an easy matter for the layman to glean a correct appreciation of the pulse, the beats of which, in the adult horse, during health, range from thirty-six to forty-five per minute.

The pulsations may be *equal* or *unequal* as to time, or volume, or both, and either hard or soft. In foals the pulse is not of much value in assisting one to mark the progress of

HORSES: THEIR POINTS AND MANAGEMENT

disease, and the number of pulsations is more than double that normally present in the healthy adult animal.

THE TEMPERATURE OF THE BODY.

The normal temperature is 100° Fahr. Unless certain special causes, *e.g.*, fever, etc., are operative, the temperature never exceeds 101.6° Fahr. A common temperature in slight fever is 103.2° Fahr. and 104° Fahr. Temperatures of 106° and 101° are not uncommonly present during severe febrile disturbances. Exercise increases temperature.

The rectum or vagina (though there is a slight variation in the heat of these situations) are the usual places to ascertain the temperature of the animal body. Take temperature night and morning if necessary. Thermometers having the Kew Certificates are, of course, reliable clinical instruments to purchase. From half to three minutes is the usual time to allow most thermometers to remain in position. The index, *i.e.*, the little detached piece of mercury, requires shaking below 100° Fahr. before using. Each small mark is equivalent to two-tenths of a degree Fahr., but each of the larger strokes has the value of one degree Fahr.

THE EYES, NOSE AND SKIN.

In health the skin ought to have a soft and pliant feel. It should be free from scurf, or any kind of roughness; the hair lying evenly over the surface. Tightness of skin, erection, or semi-erection of hair, are both indications of disorder. Inequality of surface temperature is very frequent when there is the slightest disturbance within the economy. Coldness of the skin, and sweating along with this, are very commonly

(A) SIGNS OF DISEASE; (B) THERAPEUTICS.

present during severe attacks of abdominal pain (colic, inflammation, etc.). The skin often affords one of the best or only means of diagnosing disease, *e.g.*, cracked heels, mange, glanders.

In health, the mucous membranes of the eyes and nose are of a bright pink colour, and the minute vessels entering into their delicate texture scarcely observable. The slightest variation in the animal's health causes an alteration upon the surface. Pallidity of the membranes indicates deficiency of blood colouring materials; "blueness" imperfect oxidation; "dryness," preparatory to a catarrhal affection. Excessive moisture is seen during the second stage of influenza, inflammation of the eyes, catarrh, strangles, etc. In pink eye, and sometimes at the outset of founder the mucous membranes of the eyes show remarkable turgidity, so much so that the eyelids are frequently closed.

THE BOWELS.

A hard, dry, and slimy condition of the fæces points to stoppage being the cause of disorder; blood, with loose stools, to disease of the lower end of the bowel; segment of tape, or round worms themselves, are evidence of the animal being infested with these pests.

THE URINARY AND GENERATIVE ORGANS.

Special attention should be given to these, noting any abnormality either during the act of urination, or the colour, quantity, etc., of the urine discharged.

In some diseases the urine is at once diagnostic. For instance, in the malady azoturia, the water is coffee coloured

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as a rule. Blood, previous to, or subsequent upon, the act of urination, points to diseases of some portion of the urinary apparatus. Strangury is a frequent accompaniment of colic ; likewise may be a symptom of stone, etc. Note any peculiarity in connection with these parts. A discharge of matter (pus) from either of these organs points to catarrhal inflammation, the causes of which may be manifold.

(B) THERAPEUTICAL AGENTS, Etc.

FIRING (CAUTERY).

The application of the hot iron is frequent in veterinary practice. Its abuse is also fairly general. In many diseases firing is absolutely useless, though persisted on. The actual cautery is also used for the purpose of arresting hæmorrhage.

Tendons and joints, or the neighbourhood of these, are the usual seats for the application of the cautery. It is a common practice to apply a blister after firing, though not always advisable. In spavin (bone) firing in points (pyro-puncture) seems to give better results than the line design.

BLISTERS AND BLISTERING.

Before applying a blister it is usual to wash the part with soap and warm water ; and if the hair is long previous to doing this, clip it off. See that the surface of application is thoroughly dry before using the blister.

Cantharides (Indian blister beetle) is the best vesicant for general purposes. It is conveniently applied as an ointment.

(A) SIGNS OF DISEASE; (B) THERAPEUTICS

Rub the blister in for about twenty minutes, and then tie the animal's head short for about forty-eight hours. When the blisters are bursting, it is usual to smear the blistered area with some soothing application such as olive oil, seven parts, Goulard's water, one part ; mix. Iodine ointment ; red blistering ointment, turpentine, etc., are commonly used as blistering agents.

HOW TO GIVE A DRAUGHT.

Liquid food or medicine requires to be given slowly—a pint beer bottle being used to contain the fluid. An assistant stands in front and supports the head with the twitch or other appliance, whilst the operator places himself on the right side of the head, inserting the neck of the bottle between the space formed by the molar and incisor teeth. The bottle neck should not come in contact with the teeth in the least. As the lower lip forms a pouch for the fluid, it is necessary to support this with the left hand. Give the liquid slowly, but surely, and do not let the head down until it is pretty certain that the animal has got the whole of the draught. If the draught has been properly administered, scarcely a teaspoonful ought to be spilled.

When giving a ball, the latter is, of course, grasped between the tips of the three fingers. Conical pointed balls glide down the easiest. The bolus having been delivered well back, the mouth is closed, and the neck then viewed to see its descent into the stomach. If the ball causes the horse to cough, it is almost certain to be rejected. Quietness and quickness of action are indispensable factors for giving a bolus.

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ENEMAS.

If the clyster is given with a view of emptying the lower end of the gut, the amount of fluid to be injected varies from a couple of quarts to several gallons. Tepid water, to which soft soap and a little salt have been added, makes a useful enema for this purpose. Various substances are used, such as Epsom salts, oil, etc. As a tonic to the lower end of the bowel (*e.g.*, for piles) inject about one pint of cold water every morning. Nutrient enemas are composed of flour gruel, brandy, eggs, etc. The bowel must be cleared out before making use of this form of clyster. Salt and water, or turpentine, water and soap are the agents commonly employed to remove worms, bot larvae, etc., from the rectum. Special syringes are sold for horses, and should hold at least three pints when full. Most of the newer enema syringes have pump action, so that a continuous stream is poured into the lower end of the bowel.

POULTICING AND FOMENTING.

A poultice can either be applied directly to the part, or indirectly, in accordance with the effect it is desired to produce ; likewise, it may be used either hot or cold.

Bran, linseed, oatmeal, mashed turnips, potatoes, swedes, and hops, are the substances usually used for this purpose. If a hot poultice is required then the material should be boiled with a sufficiency of water.

When a poultice has to be applied to the feet, bran is generally used ; the material being put in a piece of stout sackcloth, and then tied around the lower part of the leg.

(A) SIGNS OF DISEASE; (B) THERAPEUTICS

The application of hot water can be carried out by wringing the water out of a blanket steeped in it. A mustard plaster (paste) is, on the horse, usually applied directly to the skin, being rubbed well in, and then washed off in about half an hour, repeating if needful. Sometimes half the quantity of linseed meal is added. As a fomentation for sprains of tendons, etc., a linen bandage can be dipped in water, then covered over with a flannel one.

CHAPTER XV

SPECIFIC AND CATARRHAL COMPLAINTS.

INFLUENZA.

INFLUENZA is a frequent disease amongst horses, and one which, we regret to say, causes many deaths. Its course, symptoms and treatment are akin to the same disease in man, and to distemper affecting the dog.

It is constantly present in this and some other countries, but now and again it assumes the form of an epizoötic, *i.e.*, widely distributed.

Spring and autumn are the seasons when the complaint is most prevalent, so that it is probable that the weather has some influence over the distribution of the malady. The infective nature further largely influences its dissemination. The diverse forms assumed by the complaint are considerably influenced by the individual's constitution and its environment. Take for instance two horses attacked with the disease, one of which is situated where the most favourable conditions prevail ; the other surrounded by the very opposite state of affairs, yet the constitutional stamina of both is, to all appearances, equal. What do we commonly find ? Why, that the horse unfavourably situated has the complaint in its worst form, and that it either dies, or its convalescence is impeded through the onset of some other debilitating malady (*e.g.*, purpura), whilst the

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horse having sanitation in its favour has already gone to work again. This just shows one how important it is to try and observe cleanliness, to attend to ventilation, etc., not only when disease comes, but beforehand.

Symptoms.—In the ordinary catarrhal form of influenza, the nasal membrane is at first reddened more than is usual, and dry upon its surface. The membrane of the eye is turgid, in one form (pink eye), a very deep red, swollen, causing the eyelids to become closed, or partially closed, over the globe of the eye. There is a cough, hard and dry at first, subsequently becoming soft, and frequent. Soreness of the throat, and a purulent discharge from the nostrils, are exceedingly common symptoms. A marked feature of influenza is the rapid loss of flesh. Internal temperature varies, but it is frequently 105° Fahr., though at times higher, or it may be lower. It is owing to this rapid oxidation of the tissues that the loss of flesh and prostration ensues. The extreme exhaustion intercurrent with the disease renders a previously weak subject specially prone to succumb to the attack.

Pleurisy, inflammation of the lungs, rheumatism, and dysentery, are frequent complications, requiring treatment accordingly.

Treatment.—Good nursing is one half the battle. The prostration must be overcome through the use of nutrients, combined with alcoholic stimulants, such as brandy—say, six ounces every two hours, along with eight eggs and a pint of milk. Steam the nostrils four times daily, and to each inhalation add a tablespoonful of creolin. Linseed tea, gruel, cold milk, scalded oats, etc., ought to be allowed as food. Boiled carrots

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are equally useful. Allow cold water to drink, and add two drachms of powdered nitre to it night and morning. No purgative medicine must be permitted. Small doses, say, tablespoonful, of Epsom Salts added to the drinking water, are very useful. Treacle (say half a pound) or a few tablespoonsful of linseed oil may be added to a small mash. The body ought to be lightly, yet warmly, clad, and the limbs bandaged. The temperature of the stable must be kept as near 60° Fahr. as possible. A small stove or oil lamp will usually suffice, if the animal is in a loose box. A dry straw bed is, of course, a *sine quâ non*. If the cough is troublesome, rub the throat with turpentine liniment or mustard paste, and swathe the throat with a woollen cloth. In addition to this give the horse half a drachm of extract of belladonna and two drachms of powdered chlorate of potash, mixed with honey, three times daily. Simply smear the foregoing electuary on the inner side of the cheek. When the animal is recovering, let it have gentle exercise, along with some tonic medicine, such as sulphate of iron, 2 drs., powdered columba, 2 drs., in the form of a powder, and along with the food, night and morning.

STRANGLES.

This is a very common affection, and one specially prone to attack the young, though age does not confer immunity, neither does a previous attack of the same malady render the animal proof against a second illness, though we are inclined to believe that a prior attack of strangles diminishes the risk of infection.

In its simple and usual form the malady is denoted by the appearance of a gradually progressive abscess, beneath, or between, the branches of the lower jaw. In some instances

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there is a considerable degree of constitutional disturbance, causing loss of appetite, thirst, cough, and elevation of internal temperature, with irregularity of external warmth. In other cases there is little more apparent than the swelling under the jaw, the maturation and rupture of which is followed by a return to health, or, it may be, increased vigour. At the very outset of the complaint, the upper part of the throat feels exceedingly hard when manipulated, yet there may be no obvious swelling. When the latter becomes great, the breathing is interfered with, perhaps threatening suffocation.

Treatment.—Put the animal in a warm and dry house; clothe the body and give soft food only. Try and encourage the discharge (if any) from the nose through the use of inhalations, at frequent intervals. The swelling under the jaw can be hastened on through the use of a blister; the application of which is the least trouble, though the author's experience has shown that *better* results are brought about when the application of hot linseed, or other meal poultices, can be properly applied. The writer does not advise the use of a blister under any other circumstances than that of convenience. When the abscess has matured, *i.e.*, feels soddened, and “pits” when pressed by the finger tip, it should be lanced, its contents allowed to drain out, and the cavity washed with a solution of creolin (2 drachms to a pint of water). Now plug it with clean tow for a few days. The dressing withdrawn, it is allowed to heal up.

In the event of the systemic disturbance being great, 2 drachms of chlorate of potash can be added to a quarter of a pailful of cold water, night and morning.

In irregular strangles the abscess appears in some other situation; in many³ cases, internally.

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GLANDERS.

This malady is caused by bacilli, known as the "*bacillus malleus*." The germs are present in the nasal discharge, likewise upon the ulcers and sores. Glanders (and farcy) is readily transferred to man, the ass and the mule, also to guinea-pigs, by inoculation. It has been communicated to the ox by artificial inoculation. It assumes, in the horse, either an *acute* or *chronic* form, usually the latter, though chronic conditions of the malady may develop into the acute and *vice versa*. In the earliest stages of the malady it has been shown that the lungs are the seat of the disease; yet no external evidence of its existence may be present.

Symptoms.—There is a cough, and a hard, fixed condition of one or both of the glands beneath and at the sides of the lower jaw, but there is no tendency towards suppuration. In addition to the foregoing, there is a discharge from the nose—frequently the left nostril. This nasal discharge is not so constant as in the case of a horse having an attack of influenza, simple catarrh, strangles, etc. Examination of the nasal cavity, or cavities, will usually disclose the so-called "punched out" ulceration of the lining membrane. If the sores are carefully observed it will be seen that they show little or no inclination towards proper healing. It is not at all uncommon to find these sores, after death, upon the lining of the upper part of the windpipe. In acute glanders there is straw coloured discharge from the nose, extensive swelling of the head, high fever (probably 108° Fahr.), and, it may be, threatened suffocation. In chronic glanders the temperature is commonly elevated two or three degrees. In addition, we may find the sores of farcy (buds, buttons, or nodules), the presence of

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ulcers in the nasal cavities being the most significant sign of glanders.

Being a readily inoculable malady, extreme care must be exercised whilst handling suspected animals. The diagnosis of glanders or farcy is rendered comparatively easy through the "mallein test." Notification of the existence, or supposed existence, of either glanders or farcy to the nearest local authority is demanded, and failure to do so brings the owner liable to a fine or imprisonment.

Farcy is frequently associated with glanders. For instance, a horse may have the ordinary lesions of pure glanders for some time, when it develops the farcy sores upon the skin; hence farcy is merely the same disease as glanders, only the germs are expending their energy upon the absorbent vessels as well. Both maladies, so far as we know, are totally incurable, and the recoveries of the past were merely "patched up," spreading the disease wherever they went—living centres of infection.

Nodules arise along the course of the lymph channels, and then burst, leaving an unhealthy sore, discharging a yellowish blood-tinged matter. In acute farcy, one of the limbs begins to suddenly swell up, and the constitutional disturbance becomes severe.

Chronic, or the slow form of farcy, is liable to develop into the acute, or initiate the ordinary lesions of glanders.

ANTHRAX.

Anthrax is not a common ailment of the horse, though probably more so than is suspected. The ox is frequently affected; so that in the disposal of the carcasses of these animals, the horse may get smitten with the malady. In

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exceptional instances horses have acquired the disease through eating infected fodder, or whilst grazing over an anthrax burial ground. This latter shows the necessity for cremation. Acquired in this manner, we assume that the animal must have had some abrasion about the mouth, lip, etc., in order that the anthrax germs (bacteria) could gain admission into the blood streams. In swampy districts, *e.g.*, the fens of Lincoln and Norfolk, the horse now and again falls a victim to anthrax. Sometimes head and tongue participate. There is intense swelling and inflammation of the tongue, etc., under these circumstances (Gloss Anthrax). The germs of anthrax are very minute, and they have the form of short rods. Their presence is diagnostic of the malady. Of course, no layman could—unless an experienced microscopist—be expected to detect the organisms in the blood.

In the event of an outbreak of anthrax in any animal, immediate notification to the local authority of the district is necessary. Failure to notify renders the proprietor liable to fine, or to imprisonment.

RHEUMATISM AND JOINT-ILLNESS.

For a considerable time it has been suggested that rheumatism is of a specific nature, or, in other words, caused by germs in the blood. The hyper-acidity of this fluid is probably the outcome of an organised ferment.

Muscular rheumatism is not frequent in the horse, though cases of it are now and again seen. Foals are frequently affected, and their joints become exceedingly hot, tender, swollen, and painful, and the navel is often very sore; in fact, part of the disease infection takes place from here.

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In influenza the joints are sometimes implicated. The swellings of rheumatism have the remarkable feature of disappearing suddenly from one joint—usually re-appearing in another (metastasis). Heat, pain, and swelling, along with crackling at the joints, and fever, are amongst the leading signs of rheumatism. The chief danger of the malady rests upon the damage that may be done to the heart.

Treatment.—Keep in a very warm place, and clothe body thoroughly. Bandage limbs; if joints are swollen and hot, apply cloths, dipped in iced water, at frequent intervals. If this affords no relief in forty-eight hours, rub the parts with a liniment composed of equal proportions of capsicum, belladonna, and opodeldoc liniments. Repeat several times daily, using friction and massage. Add a few tablespoonsful of linseed oil to the food. If a foal, consult veterinary surgeon.

CATARRH AND SORE THROAT.

This term simply means a cold, and, like the human subject, the horse has often to be laid aside through a chill. A frequent cause is that of allowing the animal to stand about after being warmed up through exertion. Damp stabling, clipping, with improper after-clothing, exposure to wet, etc., are frequent common causes.

Symptoms.—Shivering, a discharge from the nose, perhaps a cough, and inflamed eyes. The appetite diminishes, and there is general langour.

Treatment.—Keep warm, allow soft warm food, and steam nostrils night and morning. Do not put to work again too soon. Sore throat sometimes accompanies a simple cold, at

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others it is part and parcel of influenza. There is usually a good deal of constitutional disturbance, even when the throat is sore as the outcome of simple causes.

Symptoms.—There is a cough, hard at first, subsequently soft and moist. The upper part of the throat is exceedingly painful when handled, even lightly, and causes immediate coughing. Difficulty of swallowing is a marked symptom. Internal temperature increased several degrees. If of a specific nature, it has the additional symptoms indicative of such.

Treatment.—Rub the throat three times daily with harts-horn and oil, subsequently swathing the same in woollen cloths. Allow nothing but linseed, gruel, oatmeal, etc., as food. Smear half a drachm of extract of belladonna, mixed with a quarter of an ounce of borax and honey, on the inside of the cheek three times a day. Add two drachms (120 grains) of chlorate of potash to the food, night and morning.

Do not attempt to administer either liquid food or medicine to a horse having a sore throat. Keep the animal in a warm place, bandage limbs and clothe body sufficiently. When the nose begins to discharge, encourage this latter by steaming the nasal passage. Pour boiling water over bran contained in a nose bag. It usually occupies several days to get the horse fit for work again.

PLEURO-PNEUMONIA.

This is an inflammation of the lining membrane of the chest and lungs. It is not an uncommon complaint, especially as a complication of influenza. Injuries to the lungs, or chest, sometimes bring it on.

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Symptoms.—A short, suppressed, and painful cough, fever, standing in a listless manner, loss of appetite, and, during the early stages, a friction or dry-rubbing sound will be heard if the ear be placed against the chest wall. Horse sometimes grunts if threatened with a stick or the hand. As there is danger of dropsy of the chest taking place, professional aid is desirable. Two distinct forms of pneumonia attack the horse, viz., contagious and non-contagious. One or both lungs may be the seat of diseased activity.

ACUTE PULMONARY CONGESTION.

Unconditioned horses occasionally fall victims to this engorged condition of the lungs. Unless relief be afforded, it proves speedily fatal. Free blood-letting is most efficient, unless the constitutional stamina of the animal forbids the adoption of this line of treatment. Sometimes it occurs through shutting horses up, whilst wet, in a closed stable.

Rapid breathing, beating of the flanks, with pulse of 100 or so per minute, and anxious facial expression, are some of the more significant signs of the malady.

INFLAMMATION OF THE BRONCHIAL TUBES

(BRONCHITIS).

When accompanied by fever it is usual to speak of bronchitis as “acute”; the absence of febrile symptoms conferring the title “chronic” bronchitis, and sometimes as “chronic cough”—an ambiguous expression. Briefly, bronchitis means inflammation of the bronchial tubes, and the smaller the tubes that are affected, the more serious the malady. Acute bronchitis frequently leads up to inflammation of the lungs.

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Treatment.—The animal must be placed in a warm, moist atmosphere. The stable should be kept at a uniform heat. Put on light, yet warm clothing, and a set of flannel bandages upon the limbs. Inhalations are of very great importance—to each inhalation add half an ounce of creolin. We are, of course, now referring to the treatment of the acute form of the complaint. Give the following bolus night and morning :—

Recipe.—Ext. hyoscyamus, 3 drachms ; powdered carbonate of ammonia, 3 drachms ; powdered squills, 1 oz. ; powdered Barbados aloes, 3 drachms ; liquorice powder, 7 drachms ; treacle, a sufficiency ; mix and divide into six balls. Give as directed above.

As soon as the fever and cough abate, discontinue the medicine. Half an ounce of chlorate of potash can be added to the animal's drinking water. Tonics and gentle exercise constitute the after treatment. Bronchitis is, as a rule, a difficult affection to treat, so that, whenever possible, skilful advice should be sought.

ROARING.

This is a very common malady in the horse, and one which renders the value of the animal exceedingly small. Few would feel disposed to purchase a “roarer.”

In some instances roaring is curable, but *never* when due to degenerative changes in connection with the muscles adjusting the laryngeal opening, and this is by far the commonest cause. The sound (roaring) varies from that of a slight whistle (whistler) to one of deep sonorous character. Slight—or it may need severe—exertion, brings out the sound, and this is the usual way of testing the wind. Grunting is a suspicion of *roaring*, though not positive evidence of its existence.

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BROKEN WIND

The term "broken wind" is employed to indicate a diseased condition in which the EXPIRATORY part of respiration is "*double*" or "broken."

In looking at the breathing of a broken winded horse it will be seen that the air is about *half expelled from the lungs in a natural manner*, with a slight secondary lift of the chest wall in order to *force out the remainder*. In addition to this, there is a soft hollow cough—a very distinctive sign of broken wind. The precise nature of broken wind is but ill-understood.

Driving a horse on a stomachful of bulky food, and feeding on dusty hay, etc., are speedy methods of making it broken winded.

Vagabonds often attempt, and sometimes succeed, in selling a broken winded horse as "sound."

The pecuniary value of such is little or nothing. So far as we know it is incurable. Butter, shot, tar, etc., are commonly used by unprincipled vendors desirous of taking advantage of an unsuspecting buyer.

CHAPTER XVI

DIGESTIVE DISORDERS.

LYMPHANGITIS.

THIS malady is often spoken of as “Monday morning disease,” owing to its common occurrence after rest, extending from the previous Saturday; also as weed, shot of grease, shot of cold, etc.

Swelling of the limbs, the result of an injury (puncture) to the foot, beginning below and extending upwards, has been spoken of by some authorities, as weed; but we think it is better to limit the meaning of the term “lymphangitis” to that affection beginning in the glands, under the forearm, or thigh, extending as a swelling down the limb.

The disease seems to be the result of congestion of the absorbent glands under the forearm, or thigh. During a continuance of labour, the lymph, secreted by the glands, is driven through the absorbent vessels, chiefly by the muscular movements, so that directly these cease, stagnation in the vessels occurs, ending in the production of the swelling.

Symptoms.—The swelling comes on very suddenly as a rule. It may be a fore or hind leg that is attacked. In our experience the near hind limb is the most frequently affected, but it is not at all uncommon in the fore. Occasionally both

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hind limbs participate in the disease. The swelling begins on the inner and upper part of the thigh or under the arm ; pitting, on pressure with the fingers, is not always present. When the swelling is firm and tense, we believe there is a greater degree of pain. The former may extend down below the knee or hock, though it is mostly seen above these parts. Colic is not an uncommon accompaniment, along with other minor symptoms of the animal being out of sorts.

Treatment (Preventive).—Allow half an hour's exercise on Sunday morning. Give (when in season) a little extra green food upon this day. In our opinion the most rational method of dealing with lymphangitis is that of giving the animal exercise. Have the horse walked about at frequent intervals. To the swelling use warm water, applied several times daily. Repeated attacks of lymphangitis (inflamed lymphatics) lead to permanent enlargement of the limb, which nothing will restore to its normal size. This is known as *chronic* weed. Send for veterinary surgeon, as this is often a very nasty complaint to treat.

AZOTURIA.

This must be regarded as a fairly common disease of the horse, though we believe that it is almost exclusively confined to horses which have been engaged in active work, and having food rich in nitrogen (proteid), *e.g.*, oats, beans, peas, etc. We have known it to come on to animals leading a life of sheer idleness, directly they have travelled a little distance. The characteristic feature of this disease is its method of attack. Perhaps a horse has been at work until, say, to-day, when he is not required, and of course, fed as usual ; directly he leaves the

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stable on the morrow, or he may have been at work a little while (perhaps gone several miles), the animal begins to be unsteady behind, then unable to move the hind limbs, ultimately falling to the ground. The hind limbs appear to be the first to give way. In some instances the horse is with difficulty got back into the stable.

Regarding the nature of the disease, very little is known. It is probably due to the formation of some poisonous organic material which accumulates in the muscles and blood, the outcome of the metabolism of proteid (beans, oats, peas, etc.), materials which constant work (muscular energy) enables the economy to expel, or dispose of, according to the demands of the system. It may be that the poisonous product thus formed is of an acid nature ; believing that, an alkaline (soda, etc.), course of treatment yields the most satisfactory (if such it can be called) results.

Cause.—The sole and only cause (predisposing) appears to be a rich nitrogen diet and rest ; the exciting cause, exercise.

Symptoms.—The method of attack has already been described. The large muscles on the hind quarters are mainly affected. In addition to the sudden loss of power in this part, the muscles feel as rigid as boards and sensation is practically lost. The pulse, frequently about ninety per minute, and temperature very little higher than in health, perhaps two degrees.

When the urine is drawn off soon after the attack it is the colour of coffee without milk, though not always discoloured. This serves to distinguish azoturia from every other disease

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affecting the horse. If the animal survives two or three days the urine grows lighter.

General Management.—In some instances it is a good plan to put the animal in slings. If on the ground we think that slinging is not of much importance. Give a good thick bed of straw, and obtain professional assistance at once.

ACUTE DYSPEPSIA.

Gorged stomach is of very common occurrence in the horse, being brought about through distension of the organ with bulky or indigestible food. A long spell of work without food, followed by a large feed, is particularly liable to produce this disorder. Both of the foregoing causes tend to impair the functional activities of the stomach, consequently, its duties begin to fail, and the arrested food undergoes decomposition, resulting in the production of gas, thus further increasing the disorder.

Symptoms.—The layman should not have much difficulty in satisfying himself whether his horse is suffering from this affection. The animal is restless at first, pawing with the fore feet, lies down, but soon rises again, continually repeating those movements. It will be evident that the horse has pain in the belly, but it is not so severe as in the case of ordinary bellyache (colic or gripes). The pain, though not steadily continuous, is hardly of the remittent character observed in this latter complaint. Sometimes it continues to annoy the horse for hours, and were it not for the absence of cold sweats the small, sharp, hard pulse beats, along with other signs, one would not find it difficult to believe that it was inflammation of the stomach or bowels.

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Although the disorder has been termed "stomach staggers"—owing to want of control over the movements—it must be understood that staggering symptoms are not by any means always present. Participation of the brain is denoted by the animal pressing its head against the wall, and, when compelled to move, shows a want of control over the movements. The breathing may be of a snoring character, and the pulse slow and full. Attempts to vomit are not infrequent, rendering the horse liable to rupture his stomach, because this act is accomplished with great difficulty in this animal.

Treatment (1) Prevention.—Avoid giving indigestible food, or excess of food. If boiled food is the cause, stop giving this. When the animal comes in after a long spell of work, feed very sparingly, and then (say in one or two hours' time), give a full meal.

(2) *Medicinal.*—Give the following draught at once:—

Recipe.—Bicarbonate of potash, $\frac{1}{2}$ ounce (dissolved in water, 1 ounce); and add to it linseed oil, $1\frac{1}{2}$ pints; mix, and administer the whole. If preferred, four drachms of aloes (dissolved in four ounces of hot water), can be given along with three-quarters of a pint of linseed oil. In about half-an-hour's time, provided that pain is present, but sleepiness absent, or only present to a slight degree, it will be advisable to try and do away with the former, for which purpose the draught as below, may be given:—

Recipe.—Tincture of belladonna, $\frac{1}{2}$ ounce; tincture of hyoscyamus, 1 ounce; tincture of capsicum, 2 drachms; tincture of ginger, 3 drachms; water, $\frac{1}{2}$ pint; mix, make draught, and give the whole to a moderate or large sized horse.

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For a colt or cob, pony, etc., half this quantity will suffice, with the addition of half a breakfastcupful of brandy or whisky. The foregoing draught can be repeated in quarter (*i.e.*, by dividing the draught into four parts) doses, every two-and-a-half or three hours, until the pain subsides.

When sleepiness and staggering are the leading symptoms, the best plan is to bleed the animal, taking away about three quarts of blood, if the horse is vigorous and full bodied. Apply cold water, or ice bag, to the head. For the latter purpose, the ice is powdered, put in a bag, and applied to the poll, with a cloth intervening, if it has to be continued for any length of time. The after treatment comprises careful feeding. Soft, warm food (bran, linseed, etc.), may be allowed for the first day or two. A little green forage will assist the action of the medicine.

The term *chronic indigestion* is often applied to symptoms analogous to those observed in the preceding disorder, but of more gradual occurrence, and more lasting in their nature. Very often we find that this so-called chronic indigestion (dyspepsia) is but the outcome of disease in connection with other organs, such as the heart, liver, stomach, intestines, etc. Disease, or irregularities of the teeth, are common causes. In some instances it may be that it is a purely functional derangement, brought about through irregular feeding, giving food of an inferior quality, driving, or working immediately after feeding, injudicious watering, or through the habitual use of food *too stimulating* in its effects.

Symptoms.—A dry and scurvy condition of the skin ; depraved appetite ; want of constitutional stamina ; constipa-

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tion ; perhaps the animal is a wind sucker ; at times, slight touches of the bellyache ; sourness of the mouth ; and, it may be, decayed or irregular teeth.

Treatment.—First of all try and find out the cause, and then treat in accordance with such. The occasional use of an antibilious ball will be of service. In addition to this, two ounces of Price's pure glycerine can be added to the animal's drinking water, night and morning. When due to worms, the appropriate remedies must be used (see Worms). If ulceration of the stomach is the cause, little can be done.

General Management.—Feed at regular hours. Do not give food until after the animal has been watered. Crushed oats, linseed and bran scalded, are excellent, particularly if given after a little hay or green meat.

Never work the animal immediately after feeding. Avoid bulky, hard, dry food, or such other as may be indigestible. Do not use spices or condiments. Carrots are excellent under these circumstances. Two or three tablespoonsful of linseed oil can be added daily to a small bran mash. Ox gall may be used in the same way if the horse can be persuaded to take it ; give in tablespoonful doses. A piece of chalk is advantageously placed within reach, so that the horse can lick at it occasionally, or rock salt substituted. Good grooming is all important, so is regular exercise.

COLIC.

In its broadest sense the term "colic" is occasionally employed to indicate any pain arising within the belly, but under this heading we purpose limiting the meaning of that

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term, using it to that affection arising from simple functional disturbances, due to a spasmodic contraction of the bowels, devoid of any inflammation. Regarded in this light it is one of the commonest affections to which the horse is subject, certainly more frequent in him than any other animal with which we are acquainted. When the complaint is accompanied by distension of the belly (bowels) with gas it is popularly known as "flatulent colic," a complaint that demands immediate treatment, otherwise a speedy death may be the termination.

This rapid disengagement of gas within the bowels appears to be the result of fermentative changes of the food, brought about through a living ferment inhabiting the intestines. Such gases as marsh gas, carbon dioxide, and sulphuretted hydrogen, appear to be the principal ones generated. Sometimes the belly becomes so rapidly distended with these gases that the animal is carried off within half an hour.

Causes.—A frequent cause is impaction of food material in the large bowel, chiefly within the double colon. Coarse, dry, and indigestible food is liable to accumulate in this situation.

Old horses and others having defective masticating powers, are somewhat predisposed to suffer from this ailment. Concretions within the bowels, especially when such are small, are by no means an uncommon cause of colic. These small concretions are chiefly dangerous in this respect, through their tendency to shift along the course of the canal, and it is, we believe, this alteration of position which causes the pain, or by complete stoppage of the bowel, exciting inflammation of the latter.

Horses suffering from repeated attacks of colic may be suspected of having these concretions in the stomach or bowels.

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Green food in excess, purgatives, drinking cold water when overheated, diarrhœa, lead poisoning, etc., are all causes of colic. Sometimes a rupture (hernia) becomes strangulated, causing the most violent symptoms of bellyache. Stallions or geldings having a rupture, should always be examined carefully with a view to ascertaining whether this is the cause of the pain.

The palisade worm (see Worms) occasionally produces bellyache, and it is quite likely other parasites do the same. In-foal mares are rather inclined to have attacks of colic, often of great severity.

Symptoms.—Most horse owners are familiar with the symptoms of colic. Sudden manifestation of pain within the belly, with intervals of freedom from this ; stamping the feet, rolling on the ground, and rising to the feet again, and when the pain is very severe, profuse sweating. Sometimes the pain is not so severe, still we know it is there, because the animal will keep rising and lying alternately. In these instances, there is usually no sweating, or very little, and we have known the animal continue in this state several days.

Treatment.—Before giving any medicine it is absolutely essential to consider the cause. We have seen it recommended to give a purgative before having ascertained this latter. This is a practice that cannot be too strongly censured. On this account the layman should never try nostrum gripe drinks.

To make the matter plainer, let us suppose that a horse suffers from frequent attacks of bellyache, and that we believe the cause to be concretions. Now, by giving a purgative, the concretion will be moved, driven along the bowel, and perhaps

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block it up. Here our purgative may have been the means of converting simple spasm into one of inflammation and death.

Again, supposing that colic results from an overdose of physic, fermentation, or excess of green food, diarrhœa, a strangulated rupture, etc., by giving physic, we will, instead of subduing the pain, increase it, and probably subdue the animal instead.

Having, or believing to have, a correct knowledge of the cause, then it may or may not be necessary to give a purgative. When thought to result from indigestion, give the following draught at once :—

Recipe.—Powdered Barbados aloes, 6 drachms (dissolved in hot water, 2 ounces); tincture of belladonna, $\frac{1}{2}$ ounce; sweet spirit of nitre, 1 ounce; sal volatile, $\frac{1}{2}$ ounce; tincture of ginger, $\frac{1}{2}$ ounce; water, $\frac{1}{2}$ pint; mix and make draught. Give the whole at once to a medium sized horse. If the pain continues (two hours) repeat, but leave out the aloes.

When the pain is due to drinking cold water after being overheated, use the draught below :—

Recipe.—Tincture of capsicum, 3 drachms; tincture of ginger, 4 drachms; laudanum, 1 ounce; tincture of hyoscyamus, 1 ounce; sulphuric æther, 2 ounces; water added, $\frac{1}{2}$ pint; mix, and give the whole just as it is.

In repeated attacks of colic, this draught will be found suitable. When the belly is distended with gas, two to eight tablespoonsful of turpentine may be given at once, in a pint of linseed oil. If there is no improvement after a time, but the belly is not as yet increasing much in size, repeat

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draught in a couple of hours, using one half the quantity. Send for professional assistance, and the sooner the better.

INFLAMMATION OF BOWELS.

The horse is a very common sufferer from inflammation of the bowels, proceeding from internal irritation (worms, etc.), but very commonly the result of twisting, or telescoping of some portion of the bowels. Strangulation of the gut, through rupture, is not uncommonly a cause of intestinal (bowel) inflammation. A puncture of the belly, and blows from without, may be productive of like results.

The same may be said when the bowel becomes blocked up by accumulated food materials. Concretions are liable to act in a like manner. In the writer's opinion, inflammation of the bowels in the horse is hardly ever brought on through cold, damp, etc. Again, we believe that colic, as a purely spasmodic affection from the beginning, never ends in bowel inflammation. There is no evidence to show one that such has ever taken place. It is purely a matter of assumption, without the slightest basis for foundation.

Poisons rank amongst other causes of bowel inflammation, associated with an inflamed condition of the stomach. In anthrax, the bowels may participate, and become inflamed. In a record of 120 cases of bowel inflammation, eighty-eight were said to be due to irritation of worms ; the chief mischief-maker being the blood sucking worm, or four-spined strongyle. The inflammation is commonly in the large bowels, and begins usually in the lining membrane of the gut, but in twist, etc., the whole thickness of the bowel participates equally.

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Symptoms.—Pain in the belly ; but, unlike that of simple colic, it is continuous, seldom having intervals of remission. Pain when the belly is pressed. The pulse is small, very hard, and quick. Anxiety of facial expression, cold sweats, writhing in pain, and the small hard pulse, are symptoms which few can mistake the significance of. The incessant pawing of the ground, looking at the flanks, pressing the hind quarters against the wall, and, in some instances, attempts to climb the latter, are additional indications of inflammation of the bowels.

The symptoms are usually rapidly progressive, until a certain stage, when the animal may become " apparently " free from pain, perhaps partaking of a little food. The layman must not be deceived in this way. When an animal, suffering in the manner indicated, suddenly becomes free from pain, it is the signal of approaching death. Here the absence of pain implies mortification (death) of some portion of the bowel. A little discretion will prevent one from falling into such an error. The anxiety of countenance, cold sweats, and running down pulse are indicative that the end is near. This is fatal in almost every instance, particularly if due to twist, or to intussusception. The limbs should be hand-rubbed, then bandaged, and a deep clean straw bed laid down. Send for professional aid at once. Purgatives should never be given to a horse suffering from pain within the belly, until it is certain that the cause of such is through impaction with food materials. Externally, the most useful application, in our opinion, is mustard paste, rubbed over the whole face and sides of the abdomen ; subsequently, say in half-an-hour, washing the same off, then rubbing the surface with a liniment consisting of equal parts

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of laudanum, tincture of capsicum, and opodeldoc. Now clothe the belly and loins with stout woollen rugs. If the pain seems to diminish, along with other improvements, the mustard can be repeated.

JAUNDICE.

The horse, unlike most other animals, has no gall bladder, or reservoir for the storage of bile, the latter being poured continuously, and directly, into the beginning of the small intestine (duodenum). This is owing to the fact that food is constantly passing out of a relatively small stomach. The bile performs important functions in connection with digestion and promoting healthy activity within the bowels. It is secreted by the cells of the liver, and any interference with the health functional activity of this organ may bring on the condition popularly known as the "yellows," which indicates disturbed or perverted activity of the liver and bile. In reality, jaundice is but a symptom of something wrong, thus we often enough observe yellowness of the skin, etc., during an attack of influenza, consequently its occurrence during the course of this disease has bestowed upon it the name of "bilious fever." The characteristic yellow colour is due to the entrance of the bile colouring matter (pigments) into the blood, and its subsequent distribution throughout the body.

Yellowness of the skin and white of the eyes ; inside the mouth, the tongue being yellow, sour smelling, and pasty ; pulse generally soft, slow, and full ; urine golden coloured ; and dung clay coloured, small in amount, and offensive. The skin may be dry and scurvy, and sometimes the horse is lame in the right fore limb. Fever may, or may not, be present.

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Treatment.—A great deal will depend upon the cause. In almost every instance it will be quite safe to allow half an ounce of sulphate of soda in the drinking water, twice daily.

This treatment can be continued until the horse shows signs of improvement. If it fails to afford any relief, it will be advisable to consult a veterinary surgeon at once.

General Management.—Give green food, and such as we know to be least stimulating. Exercise is beneficial as a rule.

DIARRHŒA.

The expulsion of liquid evacuations may be, and frequently is, an accompaniment of many disordered and diseased conditions. For instance, one manifestation of horse distemper (influenza) is marked by the sudden and persistent expulsion of liquid excrement from the bowels (see Influenza or Horse Distemper). At times it would, however, appear to be more purely of a simpler nature, such as may result from exposure to cold, or a sudden change of diet, under which circumstances it is more amenable to treatment. The occurrence of diarrhœa in foals is somewhat different from that affecting the adult, consequently the author treats of it apart from the affection now under discussion.

Causes.—As already stated, diarrhœa is invariably but a symptom of some other affection, consequently it renders the task of laying down the causation difficult, or well nigh impossible. To concentrate the various causes, would be to state all such as cause irritation of the delicate lining of the bowels, especially of the smaller ones.

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The sudden changing of a horse's diet will at times bring on diarrhœa, as frequently happens when animals are turned out at pasture after having had dry fodder for a time ; and the converse, can, with equal propriety, be applied.

Poisonous materials, either of a herbal or mineral nature, as well as the irritation induced through the consumption of large quantities of roots, may cause diarrhœa. Bad water, or water containing an excess of saline aperient minerals will at times lead to diarrhœa. One very fruitful cause of continuous scouring, in colts and fillies especially, is due to the presence of small round worms.

Symptoms.—It is not necessary to say much about these, because the excessive passing of liquid fæces is at once obvious. The material ejected is watery, sometimes of a greyish-yellow, and containing particles of solid matter, more rarely blood (see Dysentery). If due to the four-spined worm previously mentioned, one or more of these will very likely be passed in the excrement. Such symptoms as a harsh, and erect, or semi-erect condition of the hair over the body, slight yellowness about the eyes (more especially if the hair is at fault), and frequent pouting of the anus, are commonly present, when due to worms.

Treatment.—It is difficult to lay down any lines of treatment. As a preventive, it is always advisable to bring change of food about gradually. If the water is believed to be the cause, then an effort must be made to remedy it. Roots, potatoes, and other succulent herbage, will of course require to be withheld for the time being. When diarrhœa comes on during an attack of influenza, it is best combated,

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through very careful dietary, with some little medicinal assistance. If there is any degree of yellowness about the eyes, and the animal seems to have some pain within the belly, an effort must be made to relieve these symptoms, for which purpose the following ball will be useful :—

Recipe.—Compound cinnamon powder, 1 drachm ; powdered sodium carbonate, 2 drachms ; powdered opium, 40 grains ; grey powder, 30 grains ; powdered ginger, 2 drachms ; extract of belladonna, $\frac{1}{2}$ drachm ; linseed meal, 1 drachm ; treacle, sufficient to form a ball ; mix, give one of such balls night and morning, before feeding. The food must consist of wheaten flour gruel, rice water, etc.

When diarrhœa is thought to arise through indigestible matter within the alimentary canal, it is usual to try and clear as much of this away as possible. This can be done by giving the animal about a pint of linseed oil, with or without half the quantity of warm castor oil, subsequently (though not until the laxative has had time to operate) give one of the balls previously referred to.

Feed on light easily digested food, which must be of the best quality obtainable. Give as little water as possible. The bowels want rest, so the animal must be left quiet. If pain in belly is severe, try and relieve it with a warm water clyster, and an application of mustard over the skin covering the belly. Add an ounce of laudanum to the clyster. Remember that linseed, wheaten, and arrowroot gruels are all good to assist in checking diarrhœa. About half to one pailful of milk, with a few tablespoonsful (say four) of arrowroot will do good.

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DYSENTERY.

As the name implies, this diseased state is characterised by the discharge of blood, mingled with liquid evacuations. Perhaps dysentery or bloody flux is most frequently met with amongst horses whose surroundings are bad, in relation to drainage, water supply, ventilation, etc., especially if such should be suffering from diarrhoea, of which dysentery, in the horse, may be but an aggravated form. It appears that the large intestine, especially towards its termination (rectum) is the chief seat of the ulcerous sores, from which the bloody discharge is derived.

Symptoms.—Diarrhoea, mingled with a jelly-like blood stained material, the discharging of which is accompanied by straining, and pain in the belly. Each evacuation appears to give little relief, the animal, apparently, being desirous of still further emptying its bowels. The temperature may be raised a little, and such symptoms as loss of appetite (either partially or entirely), and thirst, are commonly present. Weakness is progressive, and sometimes these symptoms continue for several weeks, until the animal is completely worn out, or the inflammation extends along the bowels.

Treatment.—Place the animal under the influence of the best possible surroundings. Keep the body warm with woollen rugs. Allow warm milk and wheaten gruel for food. Avoid all solids, unless it be scalded oats, etc. Administer, internally, twice daily, a ball composed as follows :—

Recipe.—Powdered ipecacuanha, 1 drachm ; powdered acetate of lead, $\frac{1}{2}$ drachm ; powdered opium, $\frac{1}{2}$ drachm ; linseed meal, 6 drachms ; treacle, sufficient to make a ball.

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In addition to giving this ball night and morning, it is advisable to use an injection twice daily. The following will be found beneficial :—

The injection.—*Recipe.*—Hazeline, 1 ounce ; tincture of opium, 6 drachms ; starch gruel (warm), 1 pint ; mix and inject the whole at once, using a small sized (horse) clyster syringe. On no account neglect the injection. If this treatment is continued for a few days, a cure may be anticipated. Lastly, it must be mentioned that chlorodyne, given in half ounce doses, along with a pint of corn flour gruel, will sometimes afford relief.

DIARRHŒA IN YOUNG STOCK.

When mares are allowed to remain too long away from the foal, the latter endeavours as it were, to make up for lost time, thereby not only does it take milk to excess, but the fluid itself has probably undergone certain changes, rendering it difficult of assimilation, consequently it is cast out as being unfitted for the nourishment of the young animal.

Treatment (1) Preventive.—Don't allow the mare to be away from the foal above a couple or three hours at one time. Feed the dam regularly, avoiding any food which is at all likely to disorder the digestive organs.

(2) *Medicinal.*—Very often we can, by operating on the mare, through the use of simple medicinal agents, rectify the irregular state of the foal's bowels. It is almost always expedient to add half an ounce of bicarbonate of potash to the drinking water, or else to a small bran mash. Give this twice daily to the mother. At the same time let the foal have the following draught :—

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Recipe.—Castor oil, 2 ounces ; laudanum, 1 drachm ; mix, and give the whole just as it is.

Now follow this up next morning with a dose of this mixture :—

Recipe.—Tincture of rhubarb, 2 ounces ; carbonate of magnesia, 1 ounce ; nitrate of bismuth, 6 drachms ; bicarbonate of potash, $\frac{1}{2}$ ounce ; water, six ounces.

Dose.—A sixth part in gruel, night and morning.

CHOKING.

It is not often that horses suffer from this, but still it may, and does, happen every now and again. The gullet is commonly the seat of the blockage. Carrots, oil cake, potatoes, hay, etc., may lodge in the gullet. Any portion can be obstructed. In one instance the gullet was blocked throughout its length with hay. In addition to this there are other causes.

Symptoms.—If in the neck portion of the gullet the obstructing material will be felt externally. The animal may suddenly stop feeding, slobber at the mouth, and extend its neck. When it makes an attempt to swallow water the latter returns through the nostrils. Sometimes there is difficult breathing, owing to the obstructive material pressing upon the windpipe.

Treatment.—Remove food. By waiting twenty-four or forty-eight hours the stoppage may vanish. Allow a little warm water, to which three or four ounces of glycerine have been added. In case the obstruction cannot be felt, one must always withdraw the tongue with the left hand and feel at the

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back part of the mouth to see if the foreign body has lodged there; if so, try and pull it away. Send for veterinary surgeon at once.

CONSTIPATION.

A confined or torpid condition of the bowels is of common occurrence in the horse, frequently causing, in him, severe pains in the belly (see Colic). Old age, and the habitual use of dry fodder, are predisposing causes. During certain fevers, constipation is a marked feature, usually requiring to be slowly overcome. Physic should not be habitually resorted to for this purpose. Careful feeding is a more rational method. When the liver is thought to be sluggish, a ball composed of half a drachm of extract of belladonna, half a drachm of calomel, and 20 grains of powdered podophyllin, made into a bolus with linseed and treacle, and given occasionally, will be found to do good. Green food and bran mash are suitable as dietary.

DIABETES.

This is a very common complaint amongst horses, and one with which most horsemen are familiar, either through experience amongst their own horses, or as such gleaned through information from others. It is a disorder intimately bound up with disturbed or perverted assimilation of food materials, resulting in an excessive excretion of water through the kidneys. In the human subject, the urine often contains sugar—a form of diabetes not common in the horse.

A constitution previously weakened by some exhausting disease, over work, and under feeding, coupled with bad sanitation, are of course serious drawbacks against a horse pulling

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through diabetes. The constant drainage of water from the body weakens the vital processes going on within the economy.

Causes.—The most important of these are: New-burned hay, over-heated and musty hay, germinating grain of any kind, mouldy foods, the abuse of diuretic (staling) medicines, and the ingestion of various herbs whose properties notably increase the flow of water.

It is a very easy matter to tell this disorder. The characteristic symptoms are: Excessive urination (staling), great thirst, and depravity of appetite. The urine may be as clear as water, and where a number of horses are kept, and the cause is due to the food, it is usual to find the majority of the animals affected with the complaint at the same time, followed by a return to health upon the withdrawal of the cause. Such symptoms as paleness of the membranes lining the eyelids and cheeks, weakness, loss of flesh, and softness of the muscles, are constantly present. There should be no mistaking a horse suffering from diabetes in its simplest form.

Treatment.—If the food supply is at fault, stop this, and very little beyond will be required. Failing benefit, follow this up with half an ounce of powdered bicarbonate of soda in the drinking water daily. Call in professional aid.

In addition to the foregoing treatment, it is always advisable to give the animal or animals about a pint of linseed oil each. Continue this treatment for three or four days if necessary, but not any longer. It is almost certain to cure, if not, try half ounce doses of Fowler's solution of arsenic, twice daily, in the drinking water. Iodine is a specific.

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General Management.—Give light and easily digested food. Avoid musty hay, new oats, over-heated fodder of any kind. If diuretic balls or turpentine have been the cause—because these are so much abused—stop giving them at once. Horse keepers should always bear in mind that it is a very bad plan to make a practice of giving horses a weekly or bi-weekly ball, containing diuretic drugs. Such a practice predisposes to kidney affections, and makes the horse soft in muscle, and easily done up.

THRUSH OF THE MOUTH.

The mouths of foals and adult horses are frequently the seat of inflammation, the simplest form of which occurs amongst foals following their dam. The owner's attention may be directed to the foal's mouth, through the young animal having a difficulty in sucking. When the mouth is examined red patches will be seen about the cheeks and roof, and perhaps blisters here, as well as on the tongue. Very frequently there are small grey-like masses of matter within the mouth, having a most unpleasant odour.

In adult horses, the mouth usually shows the disorder in the vesicular (blister) form, less frequently as collection of matter (pustules). There is an infectious form of this disease.

These little blisters are situated upon the cheeks, sides and surface of the tongue, etc. Very shortly they burst, and leave a raw surface, doubtless exceedingly sore, rendering mastication difficult and painful. When the blisters are closely packed together, through numerity, they frequently fuse, (coalesce), producing larger sores.

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Treatment.—Suckling foals should have a little borax and honey placed in their mouths several times daily—about a teaspoonful each time will be sufficient. It is simply smeared inside the cheek. In addition to this, give the little animal the powders as below :—

Recipe.—Grey powder, 20 grains ; bicarbonate of potash, 4 drachms ; mix, and divide into four powders.

Directions.—Give one powder daily, by placing it on the back of the tongue.

In addition to the foregoing treatment, the mouth can be washed out with a solution of common salt ; this latter is exceedingly beneficial. In the course of a few days the foal should be all right. It is a very good plan to give the mare half an ounce of bicarbonate of soda or potash, along with her drinking water, once daily, for a few days.

For adult horses the same general plan of treatment ought to be adopted, but instead of the potash, you may add two drachms each of chloride of ammonia and hyposulphite of soda to the animal's drinking water twice daily, continuing this treatment for several days. Wash the mouth out with salt solution, to which a tablespoonful of chlorate of potash has been added.

General Management.—Keep in a clean stable. If possible, give green food, or nothing but gruel, such as linseed, oatmeal, etc. No solid food.

CHAPTER XVII

DISEASES OF BONES, JOINTS, ETC.

SPLINTS.

HORSES of every breed in all parts of the world are liable to have one or more of these small bony deposits upon their cannon bones, commonly on the fore-limbs, though by no means rare upon the hind cannons. Although splint is very common on both vanners and horses required for heavy draught, the significance attachable to it is nothing like so great as with animals required for fast work, *e.g.*, hackneys, etc.

Many—in fact, the majority of horses—have splint ; yet it does not necessarily produce lameness, and some veterinary surgeons do not look upon their presence as much of a detriment. However, one can never say whether such will ever produce lameness, and the writer does not look upon a horse having splint as a sound animal for the foregoing reasons.

In some instances the bony deposit is situated upon the outside, or even the front, of the cannon bone, so that if the animal receives a bruise about this region, a renewal of inflammatory activity is likely to be started, lameness and inability to work for a time being the natural results.

Sometimes there are one or more small splints in the metacarpal channel, *i.e.*, a channel formed by the cannon and small

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splint bones—under cover of the ligamentous and tendinus, structures passing down the cannon. These are not an unknown cause of an “occult” (hidden) splint lameness.

The writer has known this statement to be verified, after death, in a mare that was suspected as being lame from this cause for years.

The roughened surfaces of the splints are liable to injure the soft structures playing over them. The term asperous (rough) is applicable when the surface of the splinty deposit has a roughened and undulatory character. A double or “pegged” splint is one in which the duplex deposit is connected by a strand of the same diseased material. The lighter breeds of horses are the chief subjects of splint, probably because of the greater movements their limbs are called upon to execute. Hereditary predisposition is, by many, regarded as a cause in its production.

Evidence to disprove the truth of this statement is by no means of a positive character; in fact, rather the reverse. By some, splint is regarded as a transformation of the ligament (between the cannon and splint bone) into bone (intra-ossification), which is probably correct when the splinty deposit is confined to this situation. Obviously, it is incorrect when the seat of the deposit is situated upon the front, etc., of the cannon. Splint, in its broadest sense, is the legacy of inflammation in connection with the covering of the bone (*periosteum*), the bone, or a dual inflammation of these structures, and the causes are, in the main, injuries, applied directly or indirectly; the latter being brought about through unequal distribution of pressure. Lameness arising through splint, is chiefly seen at the time when the area of disease is acutely

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inflamed, indicated by increased heat, pain, and some swelling, upon the subsidence of which the splint remains. The way to detect the deposit is by passing the fingers firmly and steadily down the back of the cannon bone. Care must be taken not to mistake the button upon each splint bone for that of splint. The buttons form the endings of the splint bones, and are situated a little towards the sides of the lower end of the cannon, whereas splint is frequently found at the upper third of the bone, though, of course, by no means confined to the aforesaid locality. A splint upon the outside of the bone, near the knee joint, etc., is more detrimental than in the situation on which it is commonly found. Splint lameness increases with exercise.

Treatment.—When splint is forming, the horse must have six weeks' rest, and the application of some cooling lotion to the part. Consult veterinary surgeon as to advisability of point firing.

BONE SPAVIN, ETC.

In this disease the bones of the inner and lower part of the hock are affected. It is an exceedingly common disease amongst horses of every class. Hereditary predisposition is thought to exist in defective hock conformation, yet spavin can be seen and felt in hocks to all appearances well built. External injuries and concussion are important factors in exciting inflammation in the hock, as well as in certain other parts.

In the so-called occult (hidden) spavin, the inflammatory activity is chiefly confined to the rough areas between the small bones of the hock in which the interosseal ligamentous

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structures are located. Spavin, then, consists of a variously sized deposit of bony material upon the inner and lower part of the hock, such deposit being the outcome of inflammation in the bones and their covering in this region. One or both hocks may be spavined, sometimes increasing the size of the joint so much as to render the spavin appreciable at a glance.

When both hocks are spavined there is greater difficulty in determining the existence of the disease. Old horses having spavin are particularly liable to suffer repeatedly from lameness, because in them the disease is advancingly destructive, whereas heavy draught horses over five years (but not old), free from lameness, and well cared for, continue to do their work practically as well as those free from spavin. It is usual to advise the intending purchaser to buy such, of course insisting upon a reduction of price. From £7 to £10 would be a reasonable reduction.

Lighter breeds of horses having bone spavin necessarily lose that degree of mobility of the hocks so essential to them, and to none more than the running horse, hunter and trotter. Compare the hocks by the sense of touch, also measurement. Hocks may be unequal in size, yet free from spavin. Spavin lameness demands rest, cooling applications, and the use of a high heeled shoe. The bony enlargement, *i.e.*, the spavin, can be fired, preferably, in points. The method leaves less blemish than line firing, and gives better results. The term blood spavin is applied to a varicose condition of a vein, passing over the front and inner side of the joint, whilst the prefix *bog* means a *soft* and swollen condition of the joint in general. Mere fulness in this region ought not to be thus termed.

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RINGBONE.

This disease affects either the upper or lower pastern bones, and typical specimens show complete ring-like formation, either at the pastern or coffin joints. The terms "high" and "low" are frequently prefixed when the disease is, respectively, thus situated. Like the preceding diseases, ringbone constitutes unsoundness. External injuries, such as sprain of ligaments, blows, treads, etc., in this region, are liable to excite ringbone. The bony deposition may be at the front, back or sides, and either in a fore or hind limb, most frequently the former; probably the degree of lameness is less when on the latter. Long upright pasterns are regarded as predisposing causes, so that due care ought to be exercised when selecting sire and dam. In young horses, particular attention should be given to the feet. See that the weight bearing surface of the wall is uniform. When ringbone is located upon the front of a fore limb the animal will bring the heel down to the ground first, but if upon a hind pastern and behind the joint, then the toe touches the ground before the rest of the foot. We now refer to ringbone when situated high. The size of a ringbone is no criterion as to the degree of lameness.

Treatment.—During the formative stage, rest and cooling lotions.

A bar shoe is useful if the disease is on a fore limb, or in front of a hind one, but a high heeled shoe is best when at the back or sides of the latter.

FRACTURES (BROKEN BONES).

The large size of most of the bones of the horse necessarily renders a fracture of any of them of serious moment, and we have little hesitation in recommending that the veterin-

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arian be immediately summoned to attend. Split (fractured) pastern, broken ribs, and fractured leg bones are not uncommon accidents. If a wound accompanies the fracture, the gravity of the injury is considerably increased.

Whenever the horseman has reason to suspect broken bone he should take the utmost care to avoid injuring the part further. The animal must be got into the stable as carefully as possible, and the part can, in the meantime, be bathed in warm water in order to keep down the swelling, thus rendering the surgeon's diagnosis easier and more certain. A fracture very frequently observed in the horse, more especially when vicious horses are turned out to graze, is that of the second thigh bone (tibia) and the injury, in most cases, calls for destruction of the animal.

CURBY HOCKS AND CURB.

Curb is a small convex swelling about three inches below the point of the hock, and lying in the same straight line. This is most evident when the observer views it from the side. It is an unsoundness, but all veterinary surgeons do not reject a horse with curb, if such has no heat about it, or signs of lameness, and the hocks are otherwise good.

Causes.—It is an established fact that over-bent or sickle shaped hocks are those most liable to become curby. This appears to be due to the increased leverage afforded by the point of the hock, which enables the extensor tendons attached to it to act more vigorously, in this way causing a stretching of the fibres composing the ligament running down the back of the hock. Commonly we regard curb as a thickening of the ligament—the result of sprain.

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Young horses with over bent hocks should be very carefully worked if one wants to try and avoid curb. We should not advise the purchase of a young animal having hocks of this conformation.

Any exertion bringing a special degree of strain upon the hocks, *e.g.* jumping, slipping upon the haunches, backing, etc.

Symptoms.—It is only when the curb is forming that one can find any heat about it. Lameness is present at the same time, but afterwards it is comparatively rare. It is very seldom that the lameness lasts longer than a month. The size of the curb is no criterion as regards the likelihood of lameness. If the latter is present there is a want of extending power in the hock when the animal is made to trot. The swelling at the back of the hock line feels hard.

Treatment.—When the curb is forming apply cooling lotion, using tow and a pressure bandage. We do not believe in the application of a high heeled shoe, believing that it favours permanent thickening of the ligament. Rest. As soon as the inflammation has gone, or in the case of an old curb, apply daily (on the tip of the finger with friction) for five minutes, equal parts of red blistering ointment—iodine ointment and strong mercurial ointment. It is seldom the curb is removed, but the ointment deserves a fair trial. Firing is sometimes resorted to, and greatly reduces the size of the curb.

SPRAINS AND BRUISES.

Both tendons and ligaments are liable to suffer injury when overstretched. Both these structures are composed of bundles of minute fibres, and it is the rupture of these that

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constitutes strain or sprain. Many diseases around joints have their starting point in these structures. The so-called "break down" in race horses is of this nature. A frequent seat of strain is at the flexor tendons below the knee. Heat, pain, and swelling are prominent signs in a recent sprain.

Apply the following lotion: Tincture of arnica, 2 ounces; laudanum, 2 ounces; water, 1 pint. Mix, and wet the part freely, subsequently putting on tightly a hot, but dry flannel bandage. Repeat four times daily. If not completely cured in two or three weeks, try a blister or firing. If the heels are low, look to the shoeing.

CONTRACTED TENDONS.

The tendons of the fore and hind limbs are commonly contracted. Foals are occasionally born with this defect, the cure for which demands surgical interference. Thoroughbred foals seem the most liable to it. It may come on within a couple of years. The precise cause is not well understood. Over growth (in length) of the cannon bone is liable to be followed by deficiency in the length of the flexor tendons, consequently knuckling over.

Symptoms.—The foal may not be able to stand, if so, perhaps it stands upon the fronts of the fetlock joint. As the defect can often be remedied, the sooner professional skill is sought the better. For knuckling over in adult horses, division of the tendon (tenotomy) sometimes does good.

Bruising of the tissues is not an uncommon accident. It may occur along with an external wound, or apart from such (see Wounds). The swelling should be bathed with water—cold first, then warm. Bruises about the elbow and arm have often

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a very trifling wound, which commonly ends in open joint (see below). Serous abscesses are common results of bruises, and it is in this way that poll evil, capped elbow, and fistulous withers often arise; so that one cannot afford to treat an injury of this kind indifferently.

OPEN JOINTS.

The joints most frequently punctured are the knee and hock, though of course it may happen to any joint. When a joint has been opened the so-called joint oil will be seen issuing from it, the discharge being like, and the nature of, the white of egg. If the joint be flexed the lubricating fluid will ooze slowly out. An open joint is at all times of serious moment, and very often exceedingly difficult to cure. An opening into the capsule of the joint may be brought about *directly* through some sharp body penetrating into it, or *indirectly* through the sloughing of contiguous parts. When a horse falls and makes a deep wound upon its knees or knee, extreme care must be exercised to see whether there is any synovia issuing from the wound.

The Symptoms consist of the continuous outpouring of this white-of-egg-like material (synovia); the presence of a wound or puncture; and, very shortly, considerable swelling of the parts around the joint. Sometimes the animal is unable to rise owing to the impediment through such, consequently one occasionally comes across a horse that has been lying from the effects of this disease for several weeks.

Paint the sore with collodion two or three times a day and cover with a bit of cotton wool. Apply closely to wound with a covering of oil silk or gutta-percha tissue, surrounding the whole with a broad flannel bandage. Do not dress the wound

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any oftener than is necessary, and be very careful not to tear the wool rudely off, because any adhering portion of it is of assistance in stopping the discharge of the liquid from the joint. In fact, any adhering wool had better be left untouched. Do not use any water to the wound, but you may cleanse round about it. Supposing that such a wound has just been inflicted and it is situated upon the knee or hock, then the horse should be prevented from lying down for a few days. This can be done by tying him short or placing in the slings.

When a horse has been suffering from an open joint for any length of time, the joint being stiff, swollen, and the edges of the wound thick, but free from much heat, and perhaps the horse unable to rise, then the best plan is to sling the animal, afterwards apply a good blister to the swollen joint, for which purpose cantharides, or Indian blister beetle ointment, is as good as aught else. This ointment must be rubbed well in, and you must go very close to the edges of the wound. The blister acts by exciting the processes of repair, and thus closes the wound, when of course the discharge ceases, the swelling and irritation subsiding. The application of a high heeled shoe, a mild dose of physic, and a softish sort of diet, will assist matters. This treatment affords a ready and simple means of curing open joints, and without this plan of campaign many horses will, and have been, cast away for slaughter. Veterinary aid is advisable in most cases.

LUXATION OF PATELLA.

This accident is commonly seen in colts and foals, also in older horses. The knee cap (patella) slips away from its natural articulating surface. The causes of this displacement are variable.

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Fractures, relaxation of ligaments at, or in juxtaposition to, the joint are amongst such. Amongst colts, the latter appears to be a fairly frequent cause, and can often be cured by bringing the limb forward, and maintaining it here for some months, by means of a cord passed round the neck and fetlock. In every case it is absolutely necessary to feed the animal very liberally, so as to build up the muscular system, thus assisting Nature to strengthen the stifle joint. In most instances it is advisable to consult a veterinary surgeon, because he may consider it necessary to blister, apply a charge, etc. *Cramp* of the stifle occurs suddenly, and may be confused with slipped stifle.

INFLAMED HOCKS.

Wounds are the commonest cause of acute inflammation of the hock joint, frequently giving rise to open joint. (See this). As regards a chronic inflammation, spavin is the usual example of this. (See bone spavin). During an attack of rheumatism, especially in foals, the hock may be the seat of an acute and painful inflammation, likewise the same occurs when the bones of the joint are broken. Swelling of the hock may accompany other diseases and injuries, perhaps through an extension of the inflammation.

Symptoms.—If due to an injury, such will likely be seen. If the lubricating fluid of the joint (joint oil) is issuing from the wound, it shows that the capsule of the joint has been punctured. Severe lameness, with heat, pain, and swelling may be present, sometimes high fever, the temperature perhaps being 106° Fahr. Abscesses about the joint are of occasional occurrence. Fractured bones at this part are usually very difficult to tell.

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Treatment.—In acute inflammation, apply a cooling lotion, such as tincture of arnica, and tincture of opium, of each two ounces, added to a pint of water (cold). If the capsular ligament of the joint has been punctured, treat as in open joint (which see). Give a mild dose of physic, but do not purge the horse. If the animal has rheumatism, treat as in this disease (see this.) Permanent enlargement of the hock is practically incurable (see spavin, rheumatism, open joint, strangles, etc.).

THORO-PIN OF HOCK.

This means a swelling, or more correctly, a distension, at the upper and back part of the hock. The contents of swelling consists of a liquid, so that by pressing the tips of the fingers against the former, the liquid is forced through (either to the outer or inner side), accordingly causing the swelling to bulge on the opposite side, hence the name, thorough pin; derived from through pin.

It is the capsular ligament of the so-called true hock joint which becomes distended in this disease, and young horses with upright hocks are said to be most subject to it, though it does occur in older animals.

Symptoms.—Absence of inflammation and lameness, but a fluctuating swelling, or distension, at the upper and back part of the hock, capable of being distended from either side on pressure with the fingers. It is only in rare instances that lameness is present, and not until the animal has undergone severe exertion. Blistering will reduce the swelling a little, though it is hardly likely to remove it. If preferred apply cold water spray for about ten minutes every night, and paint

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with iodine afterwards. Sometimes veterinary surgeons puncture the swelling, let out the fluid, and then syringe the cavity ; but this is not the slightest use unless it be repeated several times, allowing about six weeks to elapse between each puncturing. The author advises that a veterinary surgeon be consulted.

CAPPED HOCK.

The term, capped hock, can be applied to any swelling situated upon the point of the hock. Over this latter there is a tendon playing (*flexor pedis perforatus*), forming a sort of cap at this part. Between the hinder surface of the tendon and skin, at the point of the hock, there is a small lubricating membrane, while between the cap of the tendon and the bone there is a large lubricating apparatus, known as a "synovial bursa." Either of these may be the seat of capped hock, which, so far as its origin is concerned, may be due to :—

1. Thickening of the skin or tissues beneath this.
2. Dropsy beneath the skin, which is the commonest cause of capped hock.
3. Dropsy between the tendon and bone, *i.e.*, of the synovial bursa.
4. Diseases of the point of the hock, or thickening of the tendon where it plays over here.

Causes.—Capped hock is usually caused by a blow upon the point of the hock. It is commonly seen in confirmed kickers, though a bruise in this situation may happen in a variety of ways, and although a capped hock or hocks may not be indicative of "unsoundness," the would-be purchaser should always regard such as being very suspicious. Repeated bruising during the act of rising is a common cause.

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Symptoms.—Look at the point of the hock, standing a little to one side, and, if there is a swelling, it will be seen at a glance. If it is due to cause No. 1, the skin feels thickened and tight, while dropsy (watery or serous abscess) beneath it and the tendon (No. 2), gives rise to a swelling having an elastic feel.

When the tendon is swollen it has a very hard feeling. If due to cause No. 3, the swelling is felt between the tendon and bone. Supposing that the animal has just bruised the points of its hock, then the owner may expect to find a degree of inflammation about it, viz., increased heat, pain, swelling, and perhaps lameness, though it must be said that this latter is not usually present in a horse having a capped hock.

Treatment.—If the injury has just been received, and the point of the hock feels hot and tender, then apply a lotion of a cooling nature, such as :—

Recipe.—Tincture of arnica, 1 ounce ; Goulard's water, $\frac{1}{2}$ ounce ; water, 1 pint ; mix, and make lotion.

Directions.—Keep the hock well wetted with this lotion, and apply a flannel bandage ; continue several days. When the skin is thickened, use a little iodine ointment daily. If a serous abscess, *i.e.*, a dropsical or watery swelling, forms, put a tight bandage on the hock, so that when the horse attempts to flex the leg, it may rupture the swelling. During the early stage of capped hock, the animal must not be put to work, and a high heeled shoe can be fitted with advantage. Wounds will require separate treatment (see Wounds).

CHAPTER XVIII

WOUNDS AND THEIR TREATMENT.

A WOUND may be superficial or deep. When in the region of the head, chest, and belly, there is a special liability towards internal organs becoming injured, while an injury (wound) in the neighbourhood of a joint may cause an opening of the same (see Open Joints).

It is possible to have a wound *beneath* the skin, and yet have no external evidence of it beyond that of heat, swelling, etc.

It is said that wounds of this description heal more rapidly than where the skin is broken, and this because germs are excluded. While we believe this explanation holds good, so far as injuries immediately subjacent to the skin are concerned, we do not think that answers when applied to severe muscular tears, which are often very long in regaining (if ever) their former state.

A wound in one situation may be provocative of another, or others in remote parts. For instance, a puncture of the foot, etc., will, if not attended to, cause the formation of matter, and as this has no outlet, it "burrows," making its exit by one or more small wounds around the top of the hoof. In fistulous withers we may have a similar state of affairs.

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Here the original wound causes the formation of a secondary one which, in order to effect a cure, requires the infliction of an artificial wound. In accordance with the nature of the injury, it is usual to speak of the wound as being "punctured" (prick of the foot with a nail), "contused" (a bruise, *e.g.*, corn), "incised" or "clean" cut (*e.g.*, artificial wounds), "lacerated" or "torn" (a very common variety), "poisoned" (*e.g.*, the bite of a rabid animal, or venomous beast). The word "poisoned," in its broadest sense, means the introduction of any foreign matter (living or dead) into the wound, whereby the healing process is disturbed. In this way blood poisoning may occur. The gravity of a wound does not necessarily depend upon its size, slight abrasions being sufficient at times to cause death.

Pleurisy and lung inflammation, are very liable to come on when the chest cavity has been punctured. Besides, the lungs collapse through air entering from without. A blood stained discharge from the nose and mouth points to lung injury. In some cases a piece of lung protrudes. A free exit must be allowed for the discharge to come away, and the wound kept constantly moistened with creolin lotion. Injuries of this description require skilful treatment.

The locality of the wound has an important bearing upon its gravity. For instance, a wound in the chest may extend to the same in the lung, etc., causing inflammation here. The same applies to injuries of the belly and scalp.

Again, a part may be wounded indirectly. Let us assume that the shaft of the pelvic bone is broken in such a manner that the fractured ends tear the artery passing over the bone.

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A fatal bleeding may result. Here then, we have a good example in which the displaced ends of a broken bone caused the animal's death.

In rupture of the rectum, it has been argued that the tear occurs "indirectly" in some instances, though we do not think in the majority. The nature of a horse's work may render it more susceptible to the reception of certain injuries than others. Thus we find horses employed for "shunting" purposes upon railways are frequent sufferers from wounds about the feet. "Poll evil," is, we believe, common amongst horses working in coal pits.

The same may be said of sex. Mares are exposed to wounds in connection with the reproductive organs during coitu and labour, from which the gelding and entire are exempt; but either of these may suffer (though less frequently) from injuries to the penis, sheath, scrotum, etc., etc.

Again, age has some bearing upon the infliction of artificial wounds. For example, colts are usually castrated, necessitating the infliction of a wound, consequently increased risk. In the case of a clean cut (incised) wound, bleeding profusely, we must try and stop this latter. Cold water will often arrest bleeding from small blood vessels. When a large blood vessel has been severed it will be necessary to grasp the cut end and tie a ligature (piece of silk thread, etc.), around it. When a blood vessel has been punctured it is the best plan to cut it clean across. Bleeding from the neighbourhood of the feet can be controlled by the application of a tight bandage, or else an elastic band (tourniquet), but care must be taken not to allow the latter to remain on for above half an hour or so. At any rate, never leave an elastic band around the

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limb for any length of time, otherwise the part below will die, and probably render the animal useless. Having arrested the bleeding, the wound must be cleansed from irritating particles of material.

In the case of broken knees, particles of sand and other gritty substances are very apt to insinuate themselves into the depths of the wound. It is most important to remove such. After the bleeding has been arrested, and the wound cleansed, we must, if possible and applicable, sew it up. In most cases a special curved needle is used for this purpose, the size of which will depend upon the situation and extent of the injury inflicted (see *plate*). Metallic wire, silver wire, silk thread, or catgut are the commonest substances employed for the stitches. In an emergency, ordinary twine (dipped in weak creolin lotion) can be used. Its thickness varies according to purpose. Before inserting the stitches, the edges of the wound ought to have all hair clipped off, otherwise the lips of the latter will be irritated, and the healing process hindered.

In skin and flesh wounds, each stitch is taken separately—not as in ordinary sewing—then tied off. The knot or twist must not be over the wound, but resting on the sound skin at one side. If the wound is only very small—say a couple of inches or so in length—and confined to the skin, bring the lips of the wound very closely together so as to try and get it to heal at once (first intention). When the injury is a deep one on or about the buttocks, it is advisable to send for veterinary surgeon.

This is because of the great strain thrown upon stitches in this region, causing the ordinary stitches to give way, so leaving a greater blemish than ever.

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By using "button" sutures the tension can be relieved according to necessity. Other stitches can be used in addition. The number of stitches placed in a wound will, of course, vary with its length and shape.

It is more a matter of common sense than one of rule. Always begin sewing the wound from each end towards the middle. In deep wounds the stitches require to be of stout material. Metallic wire is the most useful for this purpose. Whenever the swelling causes a drag upon the stitches, we must make an effort to do away with this tension.

When sewing a wound, it is a good plan to keep the part irrigated with creolin or carbolic acid lotion.

When a wound is torn irregularly (lacerated), the irregularities must be drawn as neatly together as possible.

BROKEN KNEE.

If a horse falls upon its knees there may be neither wound nor abrasion, but it very often happens that the knee swells in consequence. This is due to the rupture of minute blood vessels beneath the skin, the injury inducing inflammation beneath this, at and around the seat of the bruise. Perhaps this and superficial scratches are the commonest forms of injury to the knees. The ground upon which the animal falls determines, as a rule, the extent of the injury. For instance, a fall upon a rough or flint stone road is liable to injure the extensor tendons, the sheaths, or open the joint or joints, of which there are really three. When this happens there is a discharge of the lubricating fluid, or the so-called joint oil. Inability to flex the joints is constant, or partly constant,

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in injuries to the knee. Pain and constitutional disturbance (irritative fever) vary in degree in accordance with the extent of the injury. Ordinary bruises will disappear in two or three weeks, but deeper wounds (excepting open joints and the pouches (sheaths) of tendons) require about six or eight weeks before the animal is fit for work. In simple bruising of the skin use cooling lotions and a loose flannel bandage. Fasten the head to the pillar reins while there is much swelling. If the skin is broken, great care must be taken to get the wound free from irritating particles of grit, etc. Dress the wound twice daily with white creolin lotion, saturating a piece of tow with the liquid, and fastening it on with a loose flannel bandage. Irrigate the swollen knee and wound for a quarter of an hour each time you dress the knee. This is done by allowing the lotion to flow over the knee. Continue this treatment for several days or weeks if necessary. Dress the wound daily with boracic acid ointment, and if it does not seem to be healing fast enough, add 2 drachms of red oxide of mercury ointment to every ounce of the boracic ointment. Apply on lint, fastening on with a bandage. Give an occasional laxative ball or else use green fodder. If the wound begins to heal too fast, indicated by "proud flesh," dust the same with iodoform powder occasionally. When the joint has been opened—indicated by the outpouring of joint oil—the treatment becomes more difficult and dangerous, but we have seen horses do good work for years after broken knees of this description.

ABSCESS.

An abscess consists of a collection of matter either of a watery, or pus-like character. In the former case, it is known as a "serous abscess."

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Now the disease spoken of as “ poll evil,” and “ capped elbow ” (shoe-boil), have their starting point in the form of “ serous ” abscesses.

An abscess may be situated internally or externally, and of course the former are always of a more serious nature. This happens occasionally in the irregular form of strangles, and in blood poisoning.

Very large abscesses are often found beneath the skin, and may arise from external injuries, or from constitutional causes (*e.g.*, strangles).

In the early stages of “ poll evil,” the abscess should be treated with cooling applications. The same must be said for “ capped elbow.” The subsequent treatment of “ poll evil ” is that of laying open the abscess—under strict antiseptic precautions—and treating as a wound.

Other abscesses require poulticing and fomenting (or blistering), and when mature, opening with the knife (lancet) in order to allow free exit of contents.

The so-called “ cold ” abscess is one in which the formation of matter is tardy.

FISTULA OF WITHERS.

This is generally due to a bruise, or other injury to the withers. An ill-fitting saddle may produce the bruise, but it is certainly not always caused in this way, seeing that it occurs in animals which never have had, or would be likely to have, a saddle upon their backs.

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An injury in this region may set up inflammation of the bursa or lubricating pocket, situated on the upper surfaces of the fifth, sixth and seventh bones of the neck. When this part becomes inflamed, a soft, flat swelling appears on one or both sides of the withers. The contents of the swelling are a blood tinged watery fluid (serous abscess). It may be mistaken for an ordinary abscess, the contents of which is pus. When fistulous sores are present, there is a difficulty of curing these. The burrowing of matter causes serious difficulties. It is necessary to send for veterinary surgeon. In this way the shoulder blade, its cartilage of prolongation, or the spines (superior) of the vertebra may become diseased. The further the disease advances in an inward direction, the less the chance of effecting a cure. In this respect it resembles "poll evil." Fistulous sores always require "bottoming" and opening up.

WARTS, ANGLE BERRIES.

Warty growths are frequently found upon various parts of the horse's skin. The eyelid is not an uncommon situation to find one or more warts. These growths arise from the epidermis, and derive their nourishment from one or more small vessels passing in from the deeper strands of skin tissue. Their removal is often followed by considerable bleeding. When small, touch daily with strong acetic acid, or caustic soda, but if near the eyes, care must be exercised in using these chemicals. Large warts can be got rid of by passing a thread, or fine string around the base of the wart sufficiently tight to cause its strangulation and subsequent sloughing.

Tumours may arise internally, or externally, and their gravity is in proportion to their situation, size, and whether of

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a malignant (disposed to return after excision) or non-malignant nature.

CASTRATION.

The months of April, May, and June are the best for castrating colts, but adult animals may be done at any season provided they are kept in a clean, comfortable and warm house. One or two years is the usual age, but much depends upon the animal itself. Horses can be castrated either in the standing or lying attitude.

The professional fee for castrating a colt varies from 7s. 6d. to a guinea.

Animals can now be insured against the risk of death through castration and docking, although the fatalities from such are not common, considering the large number of horses annually operated upon. Rigs should always be insured. As a rule, some swelling about the scrotum and sheath appears after the operation. This need not cause alarm unless extensive. The fee for operating upon a rig is usually several guineas.

In really good weather exercise should be allowed. Green food and strict cleanliness are aids towards restoration of vigour and the healing of the wounds.

CHAPTER XIX

DISEASES AFFECTING FEET.

CONTRACTED FEET.

CONTRACTION of the foot or feet may take place at the heels, or from above to below. It very often happens that a contracted foot, or feet, is associated with co-existent or previous disease. In this way we find the feet contracted, commonly, in navicular disease. Lameness, causing perverted function, allows the hoof to become contracted. Again, a potent cause of contracted feet is through paring away the frog. This should never be tolerated. Frog (foot-pad) pressure is essential, if the hoof has to maintain its shape and size. Attend to shoeing.

THRUSH IN CLEFTS OF FEET.

This is an exceedingly common disease, and one that readily makes itself known through the offensive odour about the foot or feet. The cleft of the foot-pad (frog) shows a mattery discharge, and the substance of the pad may be considerably disorganised. The foul odour is due to putrefaction of the matter (pus). There can be no doubt that it is a disease chiefly caused through filth. Strictly speaking, it is a sign of neglect. Decomposing excreta, insinuating itself into the cleft, acts as an irritant. The hind feet are more commonly affected than the fore, though one or all may suffer.

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Treatment (1) Preventive.—Keep the feet clean.

(2) *Medicinal.*—Clean the feet, but do not do this until you have got a clean stable. If the stall floor does not drain the urine, etc., away properly, try and make it do so. Insert a little of the following powder into the cleft twice daily, and then squeeze in a pledget of tow over all. As a rule this will soon cure it.

Recipe.—Calomel, $\frac{1}{2}$ ounce ; powdered iodoform, $\frac{1}{4}$ ounce ; mix well. Apply as directed.

NAVICULAR DISEASE.

Introduction.—Just behind, and articulating with, the coffin and coronet bones, there is a small ship-shaped bone (navicular bone) over the posterior surface of which the tendon of a muscle (*flexor perforans*) plays, this tendon becoming attached to the lower surface of the coffin bone, but before it does this it expands, forming a sheath (navicular sheath) from which two pouches project—one upwards, the other downwards, containing a lubricating fluid, serving to facilitate the gliding of the tendon over the bone. When a horse becomes affected with navicular disease—vulgarly termed “groginess,” and such a horse a “grog”—the different parts participating in the disease are: (a) The navicular bone; (b) The tendon (*perforans*); (c) The lubricating sheath (bursa). In which of these parts the disease “begins” is a much disputed point. Some authorities think that it begins in the bone as a rheumatic inflammation, others in the cartilage (gristle) covering this, while others think it originates in the tendon or else the lubricating sheath. Again, some assert that its origin

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is not constant. The author's experience is insufficient to enable him to speak with confidence upon its point of origin, but a very tenable view is that the disease has its starting point upon the gliding surface (under surface) of the navicular bone. It is quite possible that the inflammation is of a rheumatic nature in some instances, but its occurrence through injury is against this theory as to the sole cause.

Disease of the gliding surface of the navicular bone will soon be followed by disease of the tendon, over which the latter glides. Brown spots of minute size are found upon the cartilage (gristle) covering this gliding (lower) surface of the bone, subsequently the cartilage becomes rough, and has an eroded (eaten) appearance. In course of time the disease advances into the substance of the bone, although it has been said that such may precede the changes in the cartilage, covering the surface previously alluded to. The tendon is always diseased upon its surface gliding over the bone, and sometimes fixed to this latter. The first change observable consists in the formation of rusty coloured spots, and it then becomes roughened. If the eroding process goes on and on, some of the minute fibres of the tendon are torn, until perhaps this latter completely gives way. When the sheath (bursa) is inflamed, it appears thickened, or even blood-red.

Causes.—It has long been supposed that navicular disease is hereditary, but this is, probably, only true as regards peculiarity of conformation in connection with the feet. It almost always affects the fore feet, and usually the lighter breeds, especially quick movers with high action. The explanation of its almost constant occurrence in the fore feet appears to be that there is a greater degree of concussion here than in the hind feet.

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A well developed foot-pad (frog) seems to be the best protective of this disease. An attenuated frog is a common accompaniment of navicular disease, and there can be no doubt that such is a powerful predisposing cause, one of the functions of the frog being to protect the navicular apparatus.

The following ideas have been propounded as "predisposing" causes of this disease: (1) Long pasterns, by causing excessive strain upon the tendons; (2) Small, narrow, upright feet, having arched soles; (3) Upright pasterns; (4) Leaving the toe too long; (5) A long period of rest, or resting upon the foot constantly; (6) Lowering of the heels, thus bringing greater strain upon the flexor tendons; (7) That it is due to a rheumatic predisposition; (8) Horses which stand "over" on the fore feet; (9) Destruction of the frog (foot-pad) through paring, or disease. No doubt there are numerous other views, all of which have their own reasons of advocacy. However, it must be borne in mind that the exciting agent is *concussion compression, or some form of injury*.

Symptoms.—(a) Lameness, coming on gradually; (b) The animal is very lame when brought out of stable, but this may pass off after a little exercise, though it is quite possible that exercise will increase the lameness. The chest appears drawn together, and the animal has a stilty look when moving. When horse is in stable, the weight is taken off the heel and the toe pointed; perhaps scraping the floor. The hoof may be smaller than its fellow. If both feet are affected, diminution in size will not be noticed, together with upright pasterns, contraction of the foot, and shrunken, dry, and wasted frog. Sometimes there is pain shown when the hollow of the heel is pressed. There is a short cat-like step particularly observable when both

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fore feet are affected. The whole limb has a shrunken look about it if the disease is fairly advanced.

Although the foregoing signs are, in the main, characteristic of navicular disease, one or more of these may be present in other forms of lameness, such as that arising from sprain of the ligaments of the coronet joint; also contracted feet and fetlock joint lameness. It is distinguished from the first mentioned with difficulty. Perhaps there is pain and a little thickening on the back of the coronet joint. From fetlock joint lameness it is distinguishable by the fact that flexion of this joint causes pain, and there may be heat, swelling, or knuckling over through tendon shortening. This disease when once established is incurable. The most important matter to attend to is the shoeing. Keep the toe short and heel rather long. Neurectomy is resorted to in some cases. It destroys the sensation in the foot.

CORNS.

These are commonly found in the inner heels of the fore feet. The weaker the horn at the heels, the greater the liability to corns. High action plays its part. Horses with narrow feet, contracted heels, weak fetlocks, or feet wide apart are predisposed to suffer in this way. The immediate cause is a bruise to the sensitive structures within the hoof, and upon the lower surface of the coffin bone, causing the rupture of a minute blood vessel. It is unsoundness.

Symptoms.—If recent, a red spot will be found, usually on the inside heel. Soon, however, this blood mark changes to brown or brick red, then yellowish black, and finally black. This latter shows that the corn has been done some little time,

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more especially if it is suppurating (suppurating corn). There may or may not be lameness, most likely the latter. A corn may end in quittor (see this), *i.e.*, the matter makes its way out around the coronet (top of hoof). In exceptional cases the coffin bone becomes diseased.

Treatment.—Remove the shoe. Get the blacksmith to pare the corn well out if it has begun suppurating. Now cleanse the foot in a solution of creolin (two ounces to a gallon of water). Put on a warm bran poultice. As soon as suppuration ceases, dress with tar and dry tow, put on a leather, and a three-quarter bar shoe. In a recent corn, put on a leather sole, along with a dressing of tar and tow. Attend to shoeing.

FORGING.

This is a clacking sound, arising through the hind shoe striking the fore one. By shoeing the fore limbs with a pair of concave hunting shoes, the noise will often cease. Leg weary horses and those recently up from grass will frequently “forge.” Keep toe of hind feet short.

FALSE QUARTER.

This is characterised by an indentation or falling in of a portion of the wall of the hoof, and it may be either upon the inner or outer side of the latter. It is due to an imperfect secretion of horn, commonly the result of an injury (bruise, cut, etc.), to the band running round the top of the hoof, known as the coronary band, or cushion. Direct injury to the horn itself may bring on sloughing at the coronet, and in this way end in false quarter. The wall of the hoof being weakened predisposes to sandcrack, consequently false quarter becomes

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“unsoundness.” In order to relieve the pressure of the shoe upon the wall at the weakened part, the horse should be shod with a shoe having a slight depression corresponding to the same, or the horn “notched.”

FLAT SOLES.

The sole of the foot is naturally concave, but its concavity sometimes becomes more or less obliterated. This is of common occurrence after an attack, or attacks, of inflammation (fever) of the feet, in which disease there is a special liability for the coffin bone to become displaced, pushing, or bulging out the horny sole. It is an indication of unsoundness, rendering the foot particularly liable to bruises. Shoeing, with a leather sole, will, to some extent, obviate this.

FOUNDER (FEVER IN THE FEET) OR LAMINITIS.

Introduction.—The sensitive structures of the foot are enclosed within the horny hoof. The coffin bone (*os pedis*) has its face and sides covered over by numerous leaf-like structures, known as the “sensitive laminae” (leaves), which are dovetailed into corresponding laminae on the inner surface of the hoof, and termed, in contradistinction to the others, “insensitive laminae.” When the feet become inflamed, it is these “sensitive laminae,” that are the chief structures participating in the inflammation.

Fever in the feet begins as a congestion of these leaves, and, as we all know, that when a part begins to swell, the pain decreases; but swelling to any extent of these sensitive structures is prevented by the non-yielding horny box (hoof), hence the reason why a horse suffers such excruciating agony in this

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disease, particularly when made to move or stand. Freedom from pain is most evident when the animal is lying down, and we believe in encouraging this; certainly not in enforced exercise—a method of treating the disease, as advocated by some authorities.

The result of the inflammation is to loosen or separate (in some cases entirely) the bond of connection between the sensitive and insensitive leaves, resulting in the displacement of the coffin bones, favoured by the weight of the body. The point of the coffin bone moves gradually downwards, forwards, and outwards, causing the sole at the toe to become first flattened, then convex (dropped sole), and in very severe cases, terminating by the bone perforating the sole, rendering the animal useless.

Causes.—(1) *Predisposing.*—Flat feet. Fatness or full habit of body, especially if such is present during foaling time (parturient laminitis), weak heels, lameness (counter pressure).

(2) *Exciting.*—Chills, either through sudden cooling of the body, or through a heavy draught of cold water, will produce it. New wheat and barley will very readily bring it on, especially in fat animals. The same can be said of new oats and new hay. Overdriving and faulty shoeing. It sometimes comes on through standing (pressure) a great deal on the other limbs, owing to lameness, say, in one fore limb. Concussion is a common cause. Again it may be the result of a congestion of the lungs (pulmonary apoplexy) changing to the feet (metastasis), likewise it may occur during colic, influenza, etc.

Symptoms.—The disease comes on suddenly. The fore feet are commonly affected, frequently the hind, or all four.

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It may be that it is first of all seen directly the horse comes out of the stable. He seems afraid to put any weight upon the fore limbs, throwing them as far forward as possible, while the hind feet are brought forward under the belly ; though this is not so evident if the whole of the feet are affected. By backing the animal, it will be seen at once that he tries to throw all the weight on the heels, raising the toes. The feet will be found hotter than natural, causing the animal pain if lightly tapped with the hammer. It is difficult to get the horse to move, but doing so brings the nature of the malady prominently out.

There is a considerable degree of fever, and the pulse is quick, full and strong. Urination is in abeyance because the animal seems afraid to put himself in position for the act. When the hind feet only are affected, the horse will stand with all four limbs bunched under the body. If the disease is complicated with colic, influenza, inflammation of the lungs, etc., then there will be the additional symptoms of these. Laminitis might be mistaken for rheumatism, or a bruised sole. Manipulation or swelling of the joints will detect the former, while the latter would be seen (see Corn and Rheumatism). Swelling of the eyelids is occasionally present.

Treatment.—Have the shoes taken off at once. If the animal is fat and vigorous, take away about four quarts of blood from the neck vein (jugular). In mild attacks, or animals in hard working condition, we do not think that bleeding is needed ; in fact, many object to it under any circumstances. Given the conditions first named, we believe it is absolutely essential to do so (see Lungs, Apoplexy of). Having done this, give the animal (unless influenza or colic prohibit it) a pint of linseed oil along with three drachms of tincture of

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belladonna, and two drachms of Barbados aloes (the latter dissolved in warm water); mix; put the affected part in cold bran poultices, keeping them cool by frequently douching with cold water. Having done this, administer the following draught every six hours.

Recipe.—Tincture of aconite B.P., 20 drops; tincture of belladonna, 2 drachms; sweet spirit of nitre, $1\frac{1}{2}$ ounces; concentrated liquid acetate of ammonia, 3 drachms; bicarbonate of potash, $\frac{1}{2}$ ounce; water, $\frac{1}{2}$ pint; mix, and give the whole as directed above. Continue this treatment until the animal has sufficiently recovered; subsequently give the patient mild exercise and tonics. Use shoes with thick heels, and keep the heels long. The horse should be allowed to lie as much as possible. Make a deep, short, straw bed. If there is no improvement after the use of cold water for forty-eight hours, begin to use warm (not too hot) water. Avoid annoying the animal. Give green food, bran mash, gruel, and cold water. Add half an ounce of powdered nitre to this latter, once daily. When recovery has taken place, use leather soles. Give the medicine at the stated intervals, and see that none of it is wasted. Keep the bed dry, and the place clean. Clothe body, and bandage limbs.

FOOT, PUNCTURED OR PRICKED.

The sensitive structures within the hoof are occasionally injured during shoeing, through misdirected nails. A picked up nail may produce the same injury. The extent of the injury will depend upon the situation of the puncture. If this is only slight, healing may take place without the formation of matter. The danger of a puncture cannot be correctly esti-

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mated. As a rule, if proper treatment is adopted at once, we may anticipate good results.

When the nail has come into contact with the coffin bone, it may end in sloughing off a portion of this latter. Punctures are sometimes produced by the animal stepping upon a sharp point, or even the clip of the shoe. Although want of care in shoeing may have been the cause of the puncture, still the very best of shoeing smiths have had the misfortune to prick a foot. A restless animal, and a brittle hoof renders shoeing difficult, and increases the liability to puncture. Carelessness in shoeing can be told by looking carefully at the nail holes. If the latter are placed where there is not sufficient horn for the nail to get a good grip, and the holes wrongly directed, then there is every reason to suppose that proper skill has not been exercised.

Proof of unskilled shoeing implies liability, and the owner can obtain compensation from the smith.

Symptoms.—Lameness after leaving the forge. Pressure with the pincers around the white line causes pain. Later on there is increased heat in the foot. Occasionally, punctures of the foot do not make themselves known until several weeks after shoeing, more especially if the injury be near the toe. Quittor may then result. In foot lameness have the sole pared and the nail holes carefully searched. It is the nail that has been withdrawn, the smith finding it misdirected, which usually causes the lameness.

Treatment.—We have assumed that the shoe has already been removed. Pare the sole and get to the very bottom of the puncture—the latter being indicated by discoloured horn. Do not be afraid to pare right through the horny sole at this

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point. It must be done, otherwise it is not a bit of use. The matter must have free exit. Now soak the foot in hot water. Put on a hot bran poultice, to which some linseed meal has been added. If the puncture has just been done, and there is no matter (pus) formed, a cold bran poultice can be put on. Rest ; green food, if possible ; dose of physic.

SIDE-BONE.

The pedal bone is enclosed by the hoof. Attached to the backward processes or wings of this bone are two flexible plates of cartilage or gristle. These plates project a little above the hoof, just at the upper border of the heels. When they are perfectly free from disease they will be found to yield when the thumb is pressed against them from the side, or, in other words, have an elastic feel. The functions of these triangular pieces of cartilage appear to be that of (*a*) allowing the soft structures at this part of the foot to expand when the latter comes to the ground ; (*b*) to conserve energy by a reversal of this process when the foot is off the ground.

This explanation will enable the reader to understand the reason why any alteration, whereby the elasticity of the cartilages is diminished, will cause defective action in this part of the foot, probably culminating in lameness. Now, the term *side bone* is applied to these cartilages when they have become either partially or completely converted into bone. Horses used for heavy draught are those generally affected. Indeed, a very large proportion of these animals have side bones after having done two or three years' work in town, or upon hard roads. Of course, the lighter bred horse is not exempt. In him it is a serious defect at all times, because he is liable, particularly so,

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to become lame at any moment. The conversion of the cartilages into bone is a gradually advancing process. Particles of lime are first of all deposited, being subsequently replaced by bony material. The change is one of degeneration, *i.e.*, the passage from a higher to a lower grade, with its attendant fall of functional value (calcification).

It may be asked, " Do side bones constitute unsoundness ? " From a legal point of view they must of necessity do so. A provisional statement is, however, necessary. Supposing that the horse has a good sized foot, well open at the heels, and altogether looks as though it could stand a bit of hard wear ; then, if the animal is suitable in other respects, there need be no hesitation in purchasing such a cart horse ; in fact, most veterinary surgeons are in the habit of passing this class of animal as sound under these circumstances. It is reasonable to assume that there will be a reduction in the price. On the other hand, never buy a light horse with side bone, or one for heavy work with a big, flat, or convex-soled foot. Narrow heels must be avoided.

Causes.—It is generally stated that side bones are hereditary, *i.e.*, handed from ancestors ; consequently many horse breeders are careful to avoid breeding from stock with the side bone stigma attached to their names. Probably this hereditary nature has been far over-estimated. There is no doubt that it is faulty conformation which is the mainstay of this predisposition (heredity).

Upright fetlocks, small feet, and narrow heels are favourable towards the development of side bones. Concussion transmitted, directly or indirectly, is the exciting cause. When

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pressed, the cartilages do not yield. They will be found hard, and perhaps greatly enlarged. If lameness is present the toe of the foot is brought to the ground first. The layman should have no difficulty in detecting side bones. It is usually the fore feet that are affected, but it may be the hind.

Treatment.—As a rule this is very unsatisfactory. Once the bony deposit is laid down, the writer knows of nothing that will do away with it. Firing or blistering is not the slightest use. If lameness is present allow rest, and have a bar shoe put on. Apply a little iodine ointment to the cartilages twice daily. Two veterinary operations have been suggested and applied for the relief of the pain, therefore lameness. The first of these is unnerving. The second is of a simple nature, and its object is that of relieving the pressure. It consists of making two or three straight cuts through the wall of the hoof by means of a fine saw or firing iron. The hoof is first of all rasped and then sawn clean through, taking care not to injure the sensitive structures beneath. The cuts are made on each side of the wall. If other means fail, the author would certainly advise the owner to have this operation done. It must not be supposed that it cures the disease.

FISTULA OF THE FOOT (QUITTOR).

Quittor is a very common disease amongst horses, of both the heavier and lighter breeds. It is characterised by the presence of a suppurating channel or channels about the coronet, and is the result of an external injury. Very commonly it is the outcome of a prick to the sole, either through the horse stepping upon some sharp pointed body, or inflicted inadvertently during shoeing. The matter being unable to find, or

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make, an exit through the unyielding, or practically unyielding horny box (the hoof), makes its way towards the softer structures above this latter, showing itself above the coronet as a tender and painful swelling, ultimately ending in the formation of one or more suppurating channels. At first the horse is extremely lame, and there is considerable constitutional disturbance. The sores have little or no inclination towards healing, but continue to emit a blood stained matter. There is no attempt at the formation of an abscess (boil) as in the case of an injury to soft parts. This appears to be owing to the non-yielding material about the coronet and parts in juxtaposition to it. A quittor, in 90 per cent. of instances, is seen at the "quarter."

Treatment. (1) *Preventive.*—I am aware that it is impossible at times to prevent the exit of matter at the coronet, but when it is known that the foot has received an injury, either through the false driving of a nail, or a similar cause, we should lose no time in paring the sole as thin as possible for some distance around the puncture, while the wound must be pared out, so as to allow free exit for any matter which may have formed, or is likely to subsequently form. Having done this, soak the foot in warm water, and cover the wound with a pledget of tow, previously soaked with carbolic acid liniment, and apply a bandage. Allow rest, which, along with a mild dose of physic, will hasten recovery.

(2) *Curative.*—When quittor has become established, I am afraid that the recommendation of any treatment likely to be adopted by the amateur, is almost certain to give him dissatisfaction. Radical cure is by operation.

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SEEDY TOE.

The term "Seedy Toe" is used to indicate a "mealy" condition of the horn forming the sole and wall, especially at the toe. Although most frequently found at, or about, the toe, it is by no means confined to this part. The soft, dry, mealy condition of the horn is very characteristic, though such is often shed in large, dry flakes.

Causes.—The writer is inclined to think that it is due to a vegetable parasite, somewhat after the nature of that causing ringworm, though at present is unable to confirm this view. It is said that the toe clip causes it, though it is impossible to admit the absolute truth of this, knowing that it occurs where this is absent. A seedy condition of the horn is frequently noticed after an attack of inflammation of the feet (laminitis).

Treatment.—Pare away all mealy and loose horn. If toe clip has been worn, remove this. Paint the sole with the following :—

Recipe.—Tincture of iodine, 2 ounces ; spirit of tar, 2 ounces ; methylated spirit of wine, 2 ounces ; caustic potash, 1 drachm ; mix, and make liniment.

Directions.—Apply with a brush to the diseased horn once a day. A bar shoe can be applied. Blistering the coronet and rest can be adopted if necessary.

SANDCRACK.

Means that the horn, forming the wall of the hoof, has a split in it, extending in a vertical direction through part, or the whole way, of its depth. The crack may be quite superficial,

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or run throughout the entire thickness of the wall, thus causing pain and lameness. The fore or hind feet may be affected, more frequently the former, in which the crack is generally situated upon the inner side—the horn being thinner and having greater weight to bear—but in the hind feet the split is usually in front. Sandcrack may be found at the toe in the fore limbs as well. The horn begins splitting from without to within, or *vice versa*. It is most important that the layman should bear this in mind, because it forms a strong argument in favour of a sandcrack being capable of sudden onset. A horse might be passed as sound, apparently so, yet the crack becomes evident shortly afterwards. Without the wall is weakened on the inner side in this way, it is hardly likely that the crack will appear suddenly.

Causes.—The exciting cause is concussion (the wall of the hoof is the chief weight-bearing structure), but predisposition is found to exist in large flat feet. Loss of water, consequently brittleness in the hoof wall, is favoured by the evil practice of rasping the crust, and I think that there can be little hesitation in believing that such is favourable towards the production of sandcrack, though it is certainly not the only cause, the writer (and doubtless others) having seen typical sandcracks in feet that have never been shod. Whether the splitting of the horn substance (tubular or intertubular), or its defective secretion from the horn-forming material at the coronet be at fault, does not appear to have been accurately determined. It may be that the splitting of the horny tubes is primarily due to this latter cause, sandcrack commonly beginning just below the coronet, *i.e.*, the top of the hoof. False quarter is a predisposing cause. When about to purchase a horse it is well to bear this

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in mind. Always raise the hair around the top of the hoof, looking very carefully for evidence of the slightest fissure. It may be that such has no greater breadth than that of a hair ; nevertheless, it is an unsoundness, because of its liability to extend.

Supposing that the purchaser was willing to buy the horse with this apparently slight defect, it is fair to assume that he would obtain a reduction in the price of the animal. When the fissure is limited to the horny wall it does not cause any lameness, but directly—and this is its liability—it extends or exposes the sensitive structures of the foot, the latter (lameness) is present.

Treatment.—If the crack is superficial, its extension can be limited by an attempt at drawing a firing iron (red hot) across its lowest points when its origin is from above, but if the split begins from below, the transverse line must be near to the coronet. There is a method known as clasping, which is a good deal resorted to in dealing for sandcrack. This consists of cutting a notch out of the horn on each side of the crack, near coronet. Leave about half an inch space between the split and the notches. A horseshoe nail is now drawn out to a broad flat point (reverse sided pointing), and driven in at one notch, coming out from the other. The nail is drawn well home with the pincers, so that the crack is kept well bolted—the nail being subsequently clinched and rasped smooth. If the split is a long one three or four clasps may be necessary. It should be distinctly understood that the nail must *only* penetrate the wall of the hoof, therefore this method is only applicable when the latter has a good thickness, as, for example, towards the toe or front face of the hoof.

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Another plan consists of making V-shaped grooves, with the apex of the V about the middle of the crack. The lines of the letter must be carried as high as the coronet, and almost three-quarters of an inch of horn allowed between each line (groove) and the crack. The firing iron can be used in place of cutting the grooves with a drawing knife. The reader will understand that the divided horn will never unite, the object being to induce a new growth of horn, likewise to prevent the crack extending, thus obviating pain. When the fissure is deep, blood may be oozing from it, and the horse exceedingly lame. It is hardly necessary to say that it is a criminal offence to work a horse in this condition. Under these circumstances have the shoe taken off, and the foot put in a bucketful of warm water, to which a couple of tablespoonsful of Jeyes' fluid have been added. After having given the fissure a thorough cleansing, pare the same well out. If the flesh is sprouting through the fissure, do not remove it, as such will gradually die away under appropriate treatment. As soon as the inflammation and pain have abated, put on a bar shoe. When the crack is at the toe, have side clips and a thin-heeled shoe. For "quarter" sandcrack use a three-quarter bar shoe. A most excellent means of taking the pressure off the fissure is afforded through cutting out a small arch immediately below the crack. Touching the coronet lightly with the firing iron (or blistering) after the inflammation has departed, assists the growth of fresh horn.

General Management.—Rest. Mild dose of physic or else green food. Keep the crack particularly clean. Watch the growth of new horn in order to note that it is going on all right. Avoid the use of the so-called "stopping" (*i.e.*, filling up the

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crack), a practice which an unscrupulous dealer might make use of in order to hide a sandcrack.

CANKER OF FOOT.

This is a very troublesome disease, and one equally difficult to cure. One foot, or more, may be affected at the same time. The disease appears to be due to imperfect horn production, a greasy stinking substance being formed instead. The frog (foot-pad), sole, bars, may be attacked in the order named ; subsequently the wall, and even the coronet. Commonly we find the disease confined to the lower surface of the foot. It is very seldom that the malady causes any lameness at first. The changes may become so extensive as to lead on to loss of the hoof, though this is a comparatively slow process. If the disease extends rapidly, it is a bad sign.

Causes.—The precise cause is probably of a specific nature (germ or parasite growth). Grease may be the forerunner of canker, or *vice versa*. Neglected thrush of the foot is favourable towards its production. The same applies to an injury. Heavy cart horses, of a soft, sluggish temperament, are the most inclined to become affected (predisposition).

Symptoms.—The sole and frog will be seen to be covered with a sponge-like growth of greasy horn, emitting a most obnoxious odour. The frog looks shapeless, and its cleft is filled with a nasty stinking material—the products of decomposition. The horn secreting eminences (*papillæ*) of the frog are greatly enlarged.

Treatment.—The veterinary operation consists of stripping off the whole of the sole, and dressing with chromic acid, tow,

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and pressure bandage. In every instance the layman should get the smith to pare away every bit of under-run horn. The liniments below will be found very useful for keeping the disease in check.

Recipe.—Lead nitrate, 2 drachms ; oxide of zinc, 2 ounces ; water, add 8 ounces ; mix, and apply to the diseased horn daily.

Working upon a brickfield or clay soil has been recommended. It is an excellent procedure to wash the feet daily in some fluid, such as a solution of creolin or carbolic acid (1-80). In addition to the use of the liniment or powder, pressure must be put on the sole and frog. Have a shoe made with a sliding iron covering, so that a thick pad of tow can be interposed.

INTERFERING OR BRUSHING.

The foregoing are different names given to indicate an injury of the fetlock, either of the fore or hind limbs, but produced through striking the fetlock with the opposite foot.

Causes.—Shoes being too wide ; clinches improperly fastened down ; toes turned in ; weakness and faulty action ; leg weariness, etc. The part which brushes is the anterior portion of the quarter.

Treatment.—Try and find the cause. The striking part can be detected by applying a wet pipeclay bandage, so that an imprint is left upon the former. A three-quarter shoe may do good. A leather boot is a useful preventive.

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SPEEDY CUT.

This injury predisposes the horse to fall. It is caused by the shoe of the opposite foot striking the leg at the lower and inner side of the knee. Keep the foot narrow on the inner side and toe, or put on a three-quarter shoe. Anti-speedy cutting gaiters are sometimes used.

TREADS ON CORONET AND HEEL.

By treading upon the coronet (*i.e.*, the band encircling the hoof) with the opposite foot, a most serious injury is a frequent result. High fever, sloughing, and quittor may thus arise, whilst false quarter is not an unknown legacy. We recommend the reader to have professional advice at once under these circumstances.

CHAPTER XX

SOME DISEASES OCCURRING ABROAD.

TSETSE-FLY PLAGUE. NAGANA

FLY disease or nagana occurs in many regions of Africa south of the equator, and causes enormous losses amongst horses in those districts where the tsetse-fly abounds. These flies are a trifle larger than the house fly; have overlapping wings when resting. The mouth is specially adapted for piercing and sucking, and it makes the best use of this arrangement so far as itself is concerned. It eagerly attacks man and certain other animals, but the horse is the one that it does so much harm to.

River banks and hot swampy places are the favourite haunts of the tsetse-fly, and those who now travel through those parts usually swathe their horses in clothing so as to prevent the flies from fixing on to the animal.

Nagana is due to a low form of animal (protozoön) parasite circulating in the blood, and transferred from horse to horse through the medium of the blood sucking tsetse-fly previously alluded to. Nagana is a Zulu term, meaning depressed in spirits. When a horse is attacked with this fatal disease, the coat begins to stand up, and swellings appear under the belly,

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etc. The animal gradually wastes away. Internal temperature may read 107° Fahr., the disease running its course within a month, but in cattle its progress is slower, many of the latter living for over six months.

SURRA.

This disease occurs in Northern India and neighbouring parts of Asia, attacking horses, camels and cattle. It is a very fatal malady, and one that carries off a large percentage of horses. It is due to minute parasites invading the blood stream. The organisms are known as trypanosomes—unicellular animals having a whiplike process at one end.

A remarkable feature in connection with these organisms is their presence in the blood of certain rats, such as the sewer rat, though they are not present in all members of this species.

These rodents do not appear to suffer any inconvenience through their presence. Such eminent bacteriologists as Koch, and the late Professor Nocard, considered that surra and nagana are identical diseases.

CAPE HORSE SICKNESS.

This is a very prevalent disease in South Africa, and there is a disease practically the same in the Soudan. The most favourable localities for outbreaks of horse sickness are where the land is swampy, in short, malarial districts. During the South African War an immense number of horses died from this deadly malady.

The term “salted” is commonly applied to a horse that has recovered from the disease, owing to its acquired immunity,

SOME DISEASES OCCURRING ABROAD

but such animals are often mere physical wrecks, and their value over-estimated. Cape horse sickness is most prevalent during the rainy season, frost being one of the best natural preventives, although cases have occurred when snow has been on the ground.

The average period for the incubation of this disease is about a week. It assumes several forms. In one form the tongue swells and turns blue through engorgement with impure blood, probably protruding from the mouth. This is the so-called *blue tongue*. In other cases the head and neck swell—*dikkop*. The pulmonary form is common, and the patient does not as a rule live longer than three or four days.

The first intimation that a horse has been infected with this disease is denoted by shivering and a rise of temperature, more especially in the evening. In addition to all the ordinary signs accompanying an acute illness, there is a *frothy discharge from the nostrils*, and it is said also a bulging of the pits over the eyes. Sometimes death occurs within a few hours, generally within three or four days. Sometimes recovery takes place, though the death-rate must be considered very high. As a preventive, horses must be kept away from the grass until the dew is off.

EPIZOOTIC LYMPHANGITIS.

This disease is uncommon in this country, and most of the cases have been recorded by Army veterinary surgeons. In some respects the malady is not unlike farcy—that is, glanders—showing itself in connection with the absorbents and skin.

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Horses, asses and mules are liable to become infected, and it is now scheduled under the Contagious Diseases (Animals) Act, so that the chances of it ever becoming established in this country are not very great. It was introduced from South Africa during the last war. Unlike glanders, it appears to yield to treatment in a considerable number of instances, the only difficulty being as to whether a cure has or has not been effected. It is very liable to recur.

CHAPTER XXI

SKIN DISEASES, ETC.

ECZEMA.

THIS is an exceedingly troublesome complaint, and is of fairly frequent occurrence in the horse. It is a non-communicable malady, and one which has its origin in impairment of the nervous and digestive functions.

The congested condition of the skin, unless arising from causes extrinsic, is but the outward manifestation of a similar condition existing within the economy.

Whilst the precise nature of these changes may be difficult of determination, it will occasionally be found that the animal thus affected has been suffering from a disordered condition of the liver, probably through a diet too stimulating in its nature. Some horses appear to be distinctly predisposed to eczema (heredity). Chemical, mechanical, and parasitical agents are, of course, capable of exciting an eczematous eruption. The latter cause has been dealt with under the heading of parasites (mange).

Symptoms.—This is preceded by redness (not seen in pigmented parts), the appearance of minute vesicles (blisters), followed by the rupture of these and subsequent desiccation of their contents upon the surface of the inflamed area. Any

HORSES: THEIR POINTS AND MANAGEMENT

part of the skin is liable to be the seat of this abnormal condition.

Treatment.—Internally give three grains of arsenious acid in the food every morning.

When the eczematous eruption is more of a chronic nature, the sores can be rubbed for half an hour, night and morning, with boracic acid ointment, to each ounce of which a quarter of a drachm of creosote has been added. Give a mild dose of physic (aloes) every three weeks, and continue the arsenic for several months, leaving it off during the time the physic ball has to be given.

MUD RASH.

The superficial structures of the skin are, in this disease, inflamed. It may be acute or chronic, and the eruption is occasionally accompanied by slight fever, hence the term “mud fever,” the prefix “mud” being used because the source of the irritation arises through the presence of this upon the skin. Leaving the mud upon the legs through imperfect grooming is a frequent cause of this complaint. The same may be said of improper after-drying—if the mud has been washed off—and allowing the horse to lie upon dirty bedding. It is often said that clipping the limbs below predisposes the animal to suffer from mud eruption.

Treatment.—Give a mild dose of physic; add half an ounce of bicarbonate of potash (powdered) to a small quantity of a warm linseed and bran mash every night and morning. Keep the limbs and body clean by thorough grooming, carried out regularly. Sponge the sore places with white lotion.

SKIN DISEASES, ETC.

CRACKED HEELS.

The horse is very liable to suffer from irritation in this region especially if the ground is sloppy, such as happens after a thaw. Washing the lower part of the limbs, yet failing to dry them thoroughly, is probably one of the most frequent causes of cracked heel.

(1) *Preventive.—Treatment.* If the heels are washed, see that they are made quite dry, then bandaged, and not exposed to any draught.

(2) *Medicinal.*—Allow a few days' rest, and apply the white lotion night and morning. Give a diuretic ball, and keep the bowels open with sloppy bran and linseed mashes.

PSORIASIS.

This is a skin disease attacking the flexor surfaces (especially) of the knee and hock joints, and vulgarly known under the names of mallenders and sallenders. It is a chronic inflammatory condition of the skin denoted by the loss of hair (animals), and the assumption of a dry and scurfy appearance.

Treatment.—Give plenty of good food, such as bruised beans, split peas, crushed oats, etc. Internally, add half to one ounce of Fowler's solution of arsenic to the drinking water, night and morning, and rub the sores with chrysophanic acid night and morning for fifteen minutes. Several weeks or months may elapse before the disease shows signs of being eradicated.

PURPURA.

This disease—usually known as purpura hemorrhagica—occasionally attacks the horse, more particularly after it has

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just passed through some exhausting malady, such as influenza. Purpura is denoted by the appearance of one or more swellings upon the skin, variously situated, though commonly about the head and belly. Sloughing sores ultimately appear; whilst, from the nose, blood may be discharged. Purpura is a malady requiring the exercise of professional skill for its treatment, so that no time should be lost in consulting a veterinarian.

MANGE.

This is a fairly common disease, and when restricted to that form induced by parasites, its frequency in the horse probably ranks parallel with the same malady in the dog and cat. Once mange breaks out amongst a stud or herd of young stock it requires more than superficial measures, not only for its eradication, but also to prevent its extension.

Symptoms.—Constant rubbing or biting the skin; loss of hair especially about the mane and tail; the formation of tiny blisters (vesicles), followed by the bursting of the latter, and the dessication of their escaped and escaping contents upon the surface of the skin, producing the so-called scab or crust.

If we remove one or more of these crusts, and examine the lower surface with the aid of a powerful pocket lens, the mange mite will likely be seen.

By far the commonest species of mange attacking the horse is that known (technically, we ought to say) as sarcoptic, and whose preference for certain parts of the hair is shown by the fact that it commonly starts its work in the regions of the head and trunk, but there is also a psoroptic variety of mange mite preferably attacking root of tail and beneath mane. The

SKIN DISEASES, ETC.

sarcoptic species of mite, producing sarcoptic mange, chiefly attacks the limbs, especially about the fetlock joints. The other mange mite is known as *sympiotos equi*.

Treatment and General Management.—In the event of an outbreak amongst a herd or stud, the immediate separation of the diseased is of primary importance. All fittings must be washed with boiling water and washing soda, dried, and in the course of a day or two lime-whitened, taking particular care to see that every crevice receives its share of attention. Burn any straw or bedding that has been near or in contact with the diseased animal. Halters, head collars, clothing, harness, etc., will require complete cleansing. Carbolic acid may be added to the foregoing liquids.

Take the diseased animal or animals and wash them with carbolic soft soap and warm water, and, if the hair be long, clip it off before so doing. Dry the body and now dress it all over with lime and sulphur lotion. In an hour, or less, the parasites will, if the dressing has been properly applied, be seen to be dead.

The dressing can be re-applied where necessary in two or three days' time. It must be rubbed well in with the hands, taking care to rub in an opposite direction to which the hairs point. Isolated patches of mange do not demand the whole of the body clipping or washing. These can be dressed with sulphur ointment, or a mixture of sulphur, oil of tar, and whale or linseed oil. One ounce of oil of tar to every eight ounces of sulphur and pint of linseed oil makes a dressing of suitable consistence for this purpose.

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GREASE.

This is a very troublesome complaint, and one to which certain horses are predisposed. The greasy condition of the limbs is commonly present in those animals of a soft or sluggish temperament. The heavier breeds are probably the most frequent sufferers. Repeated attacks of grease lead to the formation of unwieldy growths, especially around the pastern joints. The so-called "grapes" are the granulations arising from exuberant growth. Suppuration is commonly established. The hind fetlocks are those generally affected, especially the back part of these.

There is a form of mange mite (*symbiotes equi*) that attacks the pasterns and is a frequent cause of the itchy state in this region.

Symptoms.—A moist and greasy feel at the part, stiffness, suppuration, and, it may be, the formation of the grape-like outgrowths.

Treatment.—Internally give half an ounce of Fowler's solution of arsenic, night and morning, in the food. If grapy growths have formed, these can be burned off with a hot flattened piece of iron. When extensive suppuration is present, put on a few hot linseed poultices, covering the surface of the poultices with a layer of finely powdered charcoal; subsequently dress the sores with white lotion (see Lotions). A mild dose of physic and an occasional diuretic ball will assist matters. The arsenic must be continued for several months, the sore places kept clean and bandaged firmly.

SKIN DISEASES, ETC.

LICE.

Lice frequently attack the horse. Any part of the body may be attacked, but the legs, fore ones especially (in hairy legged horses), are common situations to find lice. Poultry lice (*goniotes burnetti*) are often the vermin attacking the horse.

Cleanse fittings ; burn bedding ; stall posts, hay racks, etc., ought to be washed in a decoction of tobacco—stronger the better. If the hair upon body is long, clip it off, and then wash body with carbolic soap and hot water, subsequently dress with tobacco water (2 ounces to a quart of water).

Decoctions of tobacco and stavesacre (seeds) are equally good anti-parasitides. But always bear in mind that thorough cleansing of not only the animal's body is essential, but that of the clothing, appliances, fittings ; in fact, everything that has come in either direct or indirect contact with the lice-infested animal. Poultry, or their houses, will need cleansing or removal.

COLLAR, SADDLE, AND OTHER GALLS.

Every horseman knows the frequency of sores upon the horse in the regions of the collar and saddle-beds. Defective conformation and ill-fitting tackle are predisposing and exciting causes respectively. Special attention should be given to see that the saddle, collar, pad, etc., are made to fit the animal, though the reverse is often the case. The removal of the cause, a few days' rest, and the application of the white lotion will usually suffice to effect a cure. If the horse must be worked, the injured part will require protection, otherwise cruelty

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arises. Perhaps a breast-band can supplant the collar. The term "sit fast" is applied to an indolent sore upon the back. It is a scar imbedded in a zone of dead—or practically so—tissue. Uction with iodine ointment will often excite reparative inflammation; if not, the part requires surgical interference.

NETTLE RASH (URTICARIA).

Nettle rash is characterised by the appearance of numerous variously sized oval or round elevations upon the skin, especially about the trunk. These "weals" cause a great deal of irritation, yet the skin remains intact. The departure of the "weals" is almost as sudden as that of their onset. Disturbance of the digestive and nervous systems are probably at the root of the whole affair.

Treatment.—Give a change of food, and a mild dose of Barbados aloes. Green food can be allowed. To allay the irritation, bathe the parts with a strong solution of baking soda. Boracic acid ointment is also a useful application for this purpose.

RING-WORM.

This ring-like diseased condition of the skin is due to a microscopic parasite known as *trycophyton tonsurans*. The patches have a scurfy and stubbly appearance.

Dress with iodide of sulphur ointment or paint with iodine.

CHAPTER XXII

WORMS.

The commonest round worm infesting the horse is that known as *ascaris megalocephala*, which varies in its length. It is cream coloured, has faint self-coloured and transverse stripes. It is only when these worms are very numerous that they cause the animal to fall off in condition.

Another round parasite is that known as the palisade worm (*strongylus armatus*), whose abode is in the blood vessels and bowels as well.

The wandering nature of these parasites renders their presence particularly objectionable. Their average length is about one inch and a quarter.

The four spined strongyle (*strongylus tetracanthus*) is a true blood-sucking worm. When fresh they are bright red in colour. They are usually found adhering to the pellets of dung. Part of their life history is spent in the wall of the gut, which they are liable to perforate to serious consequences.

The pin worm (*oxyuris curvula*) takes up its abode at the lower end of the bowel (rectum).

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Treatment for Round Worms.—For the parasite first named, add a drachm of santonin, and four drachms of powdered gentian root, to a handful of bran every other night, and at the end of the week give a ball composed of five drachms of Barbados aloes. Burn all the excrement. Continue the treatment for several weeks. Avoid feeding the animal for at least a couple of hours after giving the medicine, and do not forget to moisten the bran with water, otherwise the powder will likely be wasted.

For the treatment of animals infested with the four spined strongyle, tonics are called for in advanced cases ; whereas early on vermifuges are the best.

When a colt is suspected of having these worms, give it a couple of ounces of turpentine, mixed with half a pint of linseed oil. Repeat twice or thrice weekly. Molassine meal, in quantities from half to four pounds per day, is an excellent remedy for expelling worms.

For pin worm : injections of salt and water, or turpentine, soap and water, are the best.

The perfoliate and plaited tape worms are the commonest of these. The first named ranges from one to four inches, and the second three feet in length. Several gallons of these worms are occasionally taken out of the bowels after death.

Treatment.—Previous to giving the following draught, feed the animal upon bran mash, to which linseed oil or treacle has been added.

The Draught.—℞. oil of turpentine, 1 to 3 ounces ; 6 eggs (beaten up) ; mix, and add linseed oil, 1 pint. Repeat in three or four days' time if needful.

WORMS

Drachm doses of tartar emetic (given every other night in food) are useful for the destruction of tape worms. Perhaps the best remedy of all is that of male fern, either as an emulsion or in the form of liquid extract.

THE GAD-FLY.

The gad-fly usually attacks animals whilst they are grazing, and commonly during June, July, August, September and October. The fly is yellowish brown, and has black markings.

The hinder end of the female's body is provided with a prolongation known as the ovipositor. The eggs are laid during the months stated, and deposited upon the inner sides of the knees, on the mane and shoulder, etc. They cause the horse some discomforture, and it is quite possible that the animal licks the parts; in this way the immature parasite finds its entrance into the horse's stomach.

It takes from five to twenty-one days for the ova to develop into the maggot stage. The larva attach themselves to the upper portion of the lining membrane of the stomach, and in this situation they remain for eight to ten months, subsequently being expelled with the excrement. These are called "bots." After their expulsion—all things being favourable—they develop into the fully developed fly. This occupies about six or eight weeks.

Treatment.—(*Preventive*).—House when flies are likely to be about. Give 2 ounces of turpentine and half a pint of linseed oil once or twice a week.

Externally.—Apply a dressing composed of 1 ounce of creolin, 2 ounces of terebene, and 1 pint of linseed oil, mixed together. Repeat if necessary.

CHAPTER XXIII

DISEASES AND INJURIES OF THE EYE.

LIKE most other animals the horse is subject to injury and disease of the eyes. The commonest of these is *ophthalmia*, or inflammation of the mucous membrane lining the eyelids and reflected over the globe of the eye.

At one time there used to be a specific form of ophthalmia, known as moon-blindness, attacking horses, commonly completely destroying the sight. Improved sanitation seems to have abolished this severe form of ophthalmia. Sometimes the eyes are very much inflamed during an attack of influenza. The most frequent causes are injuries (torn eyelids), and the entrance of foreign bodies, such as chaff, etc. The treatment, will, of course, be directed to the removal of the cause, if possible, and the daily use of some mild astringent, such as boracic acid solution, or a solution of sulphate of zinc.

If the cornea becomes opaque, this will require specially treating, therefore call in professional aid.

CATARACT.

This is not at all uncommon, and of course it renders the animal's sight very faulty. It is due to a precipitation of albuminous material in the capsule of the crystalline lens, or else the lens.

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Old horses often develop cataract, but it may easily be produced by a blow from a whip, etc. Careful inspection of the eye often reveals a cataract appearing as a greenish star-shaped body in the interior of the eye. Its detection is, however, more a matter concerning the professional.

TORN EYELIDS.

Many injuries of the eyelid are extremely painful, setting up violent inflammation in and around the injury. A good deal of surgical skill is required to give good results, therefore seek the services of a veterinarian. In the meantime, it is a good plan to freely foment the injured parts with warm water, taking particular care to have the water boiled and cooled down, and to have the hands and utensils scrupulously clean. Suppuration can be limited, though not exactly prevented, if the foregoing advice be acted upon. Bathing the eyes with milk and water is rubbish, and calculated to infect the eye. An infusion of camomile is very useful for this purpose.

WARTS ON EYELIDS.

These require touching with a little calcined magnesia, made into a paste with lime water. If this fails, with a stick of caustic, but never use acids about the eyes.

STRICTURE OF LACHRYMAL DUCT.

The lower opening of this is situated within the entrance to the nose, being denoted by a small hole punched out just inside nostrils.

DISEASES AND INJURIES OF THE EYE

If the lower opening is obstructed, or any other part of the duct, the tears flow from the eyes, instead of being carried away by the duct through the nostrils.

Treatment is purely the work of the veterinarian.

WORM IN THE EYE.

This is a form of parasitic ophthalmia not uncommon at Madras, Ceylon, and some other parts of India. In Bengal it is known as sanp or serpent in the eye.

The worm or worms can be seen swimming about in the fluid contained within the front chamber of the eye, where they cause a lot of trouble unless removed by puncture.

LOTION FOR INFLAMED, ETC., EYES.

R. Sulphate of zinc, 1 drachm ; boracic acid, 1 drachm ; alum, $\frac{1}{2}$ drachm. Mix ; bathe eyes ; boiled water, $\frac{1}{2}$ pint.

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MOLASSINE MEAL

"Holds the Field" As a Food for Horses.

It keeps them in good health, prevents and cures Coughs, Colds, Colic, Diarrhoea and other complaints.

PREVENTS AND ERADICATES WORMS.

It is equally suitable for Draught Horses, Hunters, Racehorses, and brings Show Horses to the pink of condition.

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"A brown horse in a most emaciated state and quite useless (condemned by the S.P.C.A.) weighed only 847 lbs. on the 7th of November, 1904. The horse was weighed on the 18th of November and scaled 896 lbs. On the 18th of December it was still improving and showed a total gain of 98 lbs. in about six weeks while feeding with Molassine Meal."

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"I have used Molassine Meal for heavy horses and travellers' ponies for about five years. I was favourably impressed from the first, and although my foreman was prejudiced against it he now states that it has kept the horses on their legs, when without it they would frequently have been laid up. Total absence of veterinary accounts. As a worm eradicator it is unquestionably all that it claims to be."

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and mix thoroughly
therewith.

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regular use effects
a considerable saving in the forage
account, animals obtaining the full
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